V14540

Compact disc player CD730/00B/05B

CD732/00B/05B

Service
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Service Manual

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PHILIPS

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PCS 60 610

TECHNICAL SPECIFICATIONS

General

1.Mains voltage	/00B	: 230V (+6 -10%)
	/05B	: 240V (±10%)
2.Mains frequency		: 50-60 Hz
3.Mains voltage selection		: See circuit diagram Power Supply
4.Power consumption mains,operated		: 10W

External RC-5 connection(only CD730)

Specification:	V-in Low	: from -2,0V to +1,6V
	V-in High	: from +3V to +7,5V
	R-in	: from 47kΩ to 68kΩ

Line output

1.Number of channels	: 2
2.Output voltage	: 2 Vrms ± 3dB
3.Unbalance left-right	: max. ± 1,2dB at 1 kHz
4.Output resistance	: 1 kΩ
5.Signal to noise ratio	: min. 84dB from 20 Hz to 20 kHz
6.Total harmonic distortion + noise	: min. 70dB from 20 Hz to 20 kHz
7.Channel separation	: min. 70dB from 20 Hz to 20 kHz
8.Frequence response	: ± 1dB from 20 Hz to 20 kHz
9.Frequence response with de-emphasis	: ± 2dB
10.Automatic switched deemphasis with time constant	: 15/50 µs
11.Dynamic range 20Hz-20kHz	: min. 70dB from 20 Hz to 20 kHz
12.Non linearity at -90dB	: min. ± 2dB
	: typ. ± 1dB

Variable headphone (low end)

1.Output voltage	: max. 5 Vrms ± 3dB
2.Unbalance left-right	: max. ± 1,2dB
3.Output resistance	: 120 Ω
4.Load impedance range	: 32 Ω to 600 Ω load
5.Output power	: 0 to 30 mW into 30 Ω load
	: 0 to 50 mW into 150 Ω load
	: 0 to 30 mW into 600 Ω load

Audio specs in case of 600 Ω load at 4 Vrms voltage output

6.Signal to noise ratio	: min. 80 dB
7.Dynamic range	: min. 70 dB (20 Hz -20 kHz)
8.Total harmonic distortion	: min. 60 dB (20 Hz - 20 kHz)
9.Channel separation	: min. 70 dB (1 kHz)
	: min. 65 dB (31,5 Hz - 16 kHz)

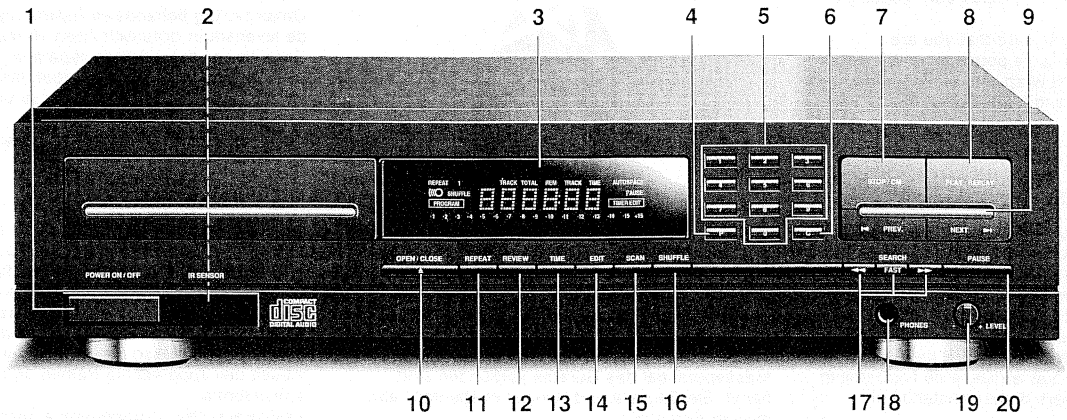
Dimensions and weight

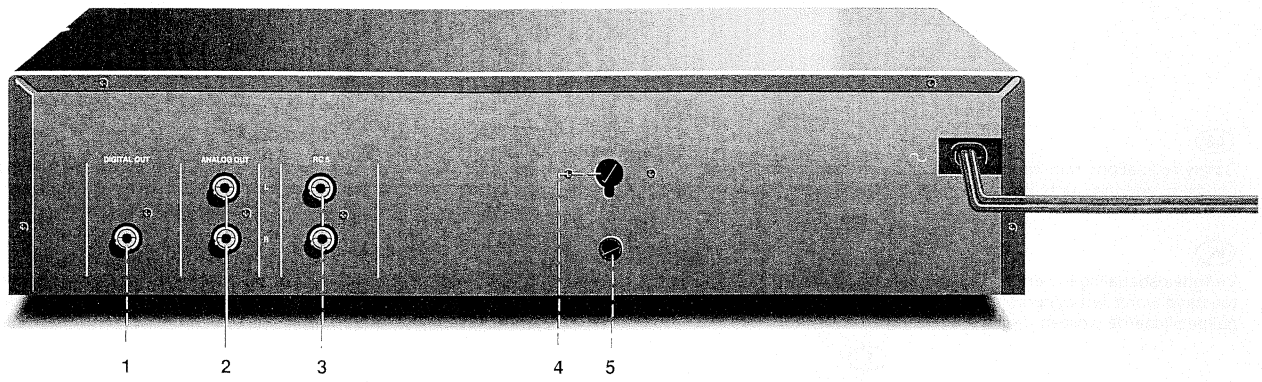
1.Apparatus tray closed	: WxDxH 435 x 300 x 90/106 mm
2.Apparatus tray open	: WxDxH 435 x 445 x 90/106 mm
3.Weight	: 4 kg

Optical read-out system

1.Laser type	: Semiconductor AlGaAs
2.Wavelength	: 780 nm ± 20 nm
3.Light output (c.w.)	: max. 0,5 mW

CONTROLS AND CONNECTIONS





CONTROLS

Indication on Player	Indication in diagram
1. POWER ON/OFF	1500
2. IR SENSOR(CD732)	1461
3. Display	1450
4. PROG.	1429
5. 1-0 digit keys	1420,1421,1422,1427,1428, 1434,1435,1441,1442,1443
6. CLEAR	1436
7. STOP/CM	1433
8. PLAY/REPLAY	1432
8. REPEAT	1430
9. <PREV(ious) NEXT>	1425 1440
10. OPEN/CLOSE	1426
11. REPEAT	1430
12. REVIEW	1431
13. TIME	1447
14. EDIT	1423
15. SCAN	1444
16. SHUFFLE	1446
17. << SEARCH >>	1438 1445
18. PHONES	BU-5
19. LEVEL	3370
20. PAUSE	1439

CONNECTIONS

Indication on Player	Indication in diagram
1. DIGITAL OUT(CD732 only)	BU-4
2. ANALOG OUT	BU-2
3. RC 5(CD730 only)	BU-3
4. Voltage selector(not all versions)	1010
5. Mains fuse holder(not all versions)	287

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux decharges statiques (ESD).
Leur longevité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

CLASS 3B
LASER PRODUCT

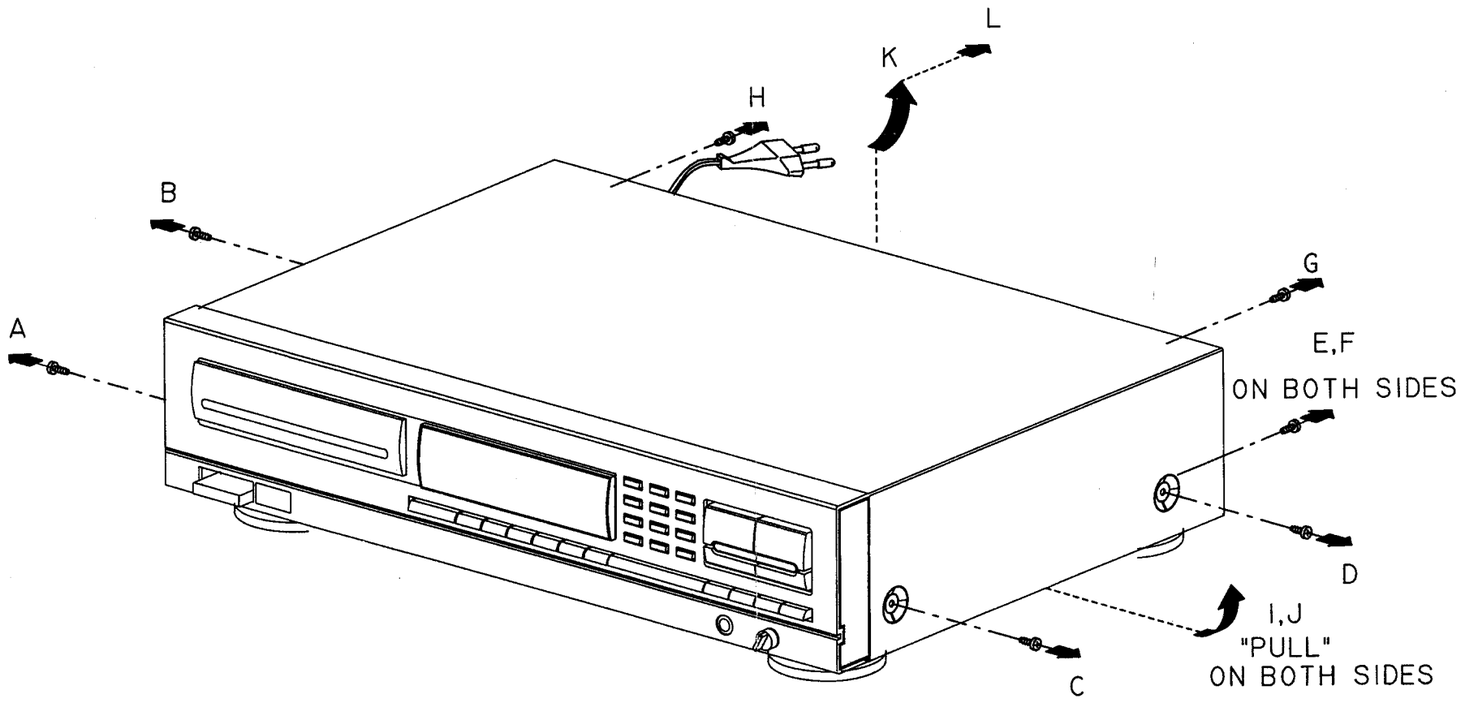
CAUTION INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTTEILYLLE ÄLÄ KATSO SÄTEESEN
VARNING OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
ADVERSEL USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UNSAETTELSE FOR STRÅLING
DANGER INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
VORSICHT UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne"

CLASS 1
LASER PRODUCT
3122 110 03420

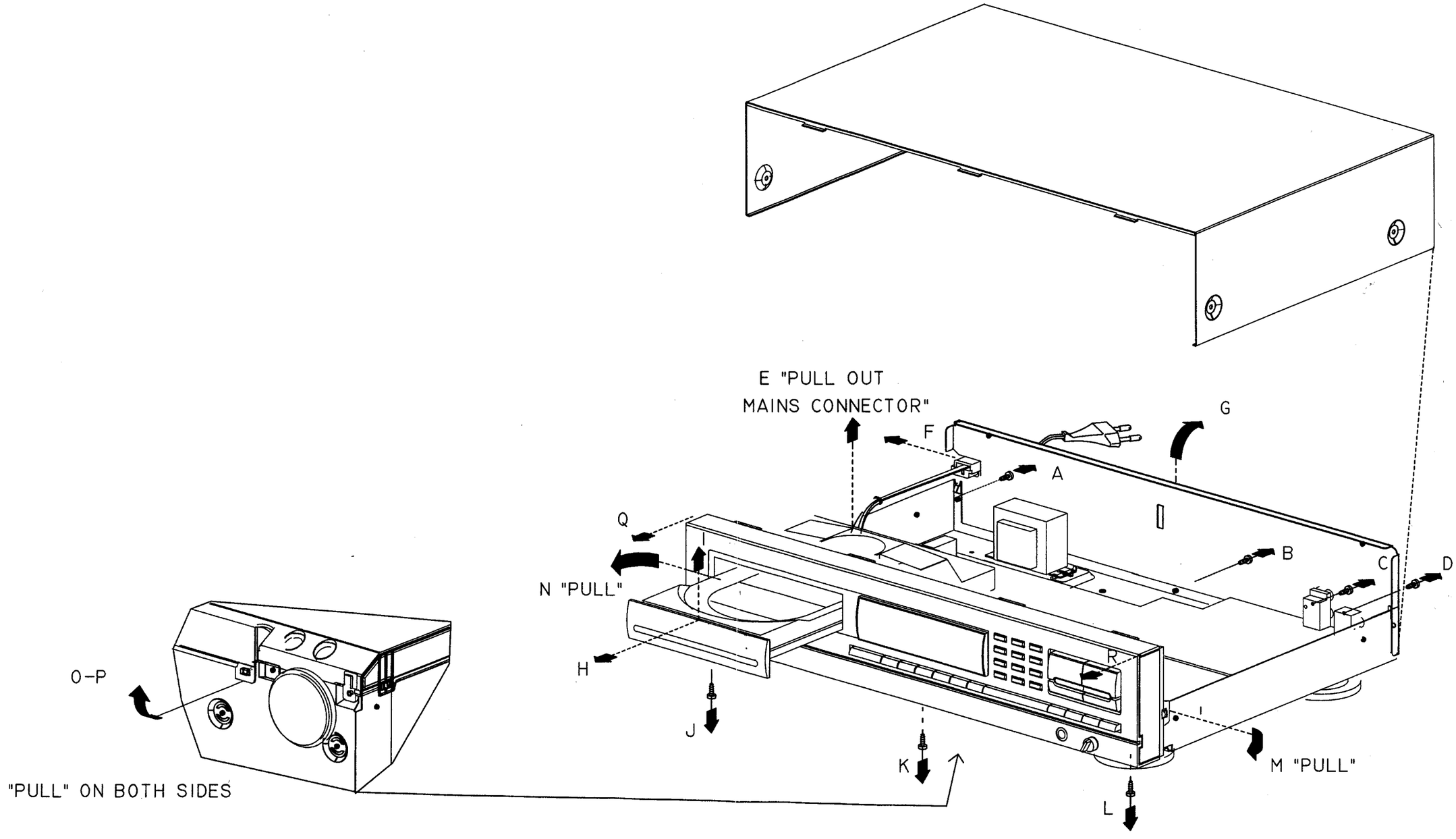
DISMANTLING INSTRUCTIONS

DEMOUNTING OF COVER



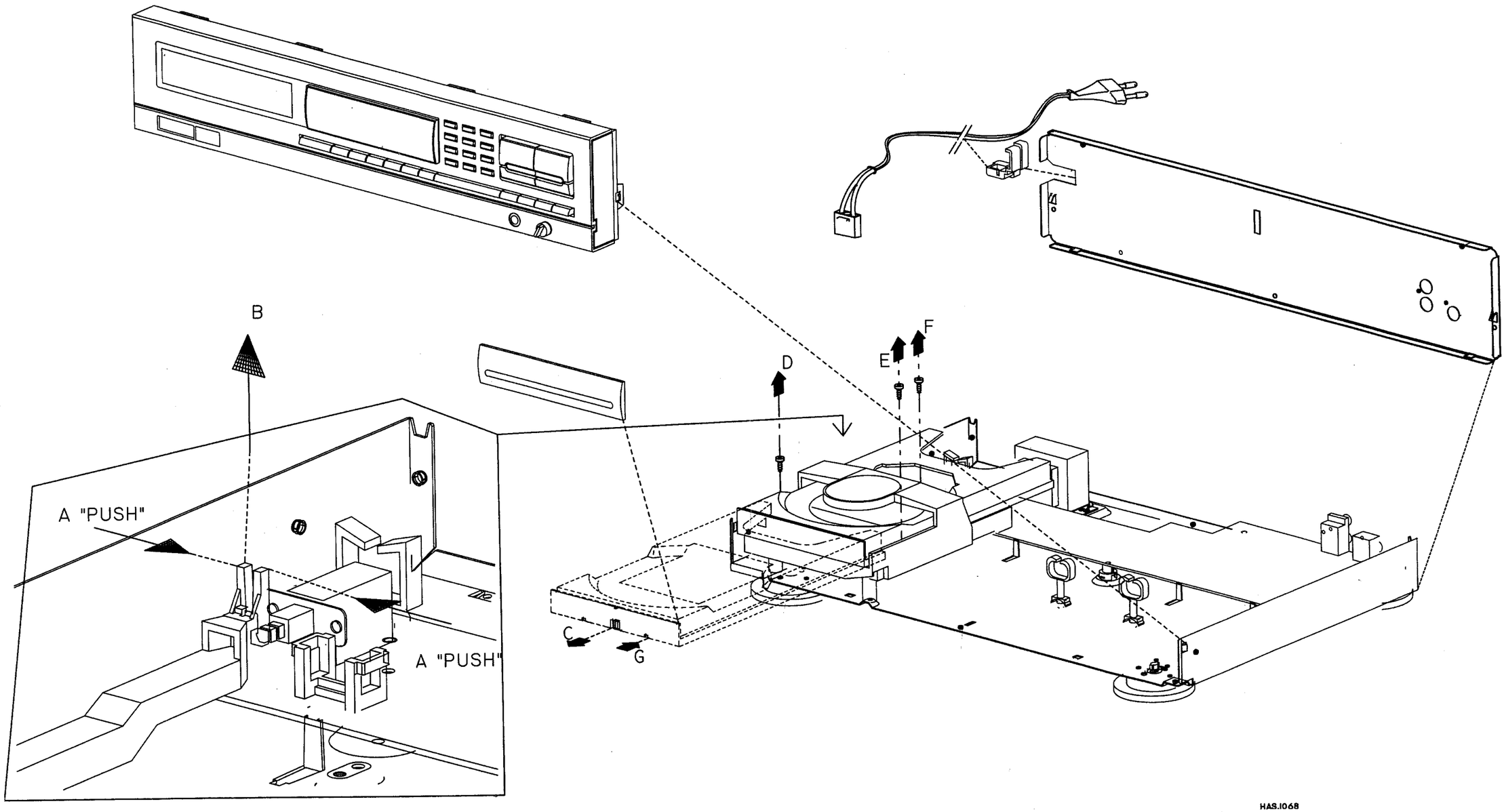
HAS.1066

DEMOUNTING BACKPLATE AND FRONT



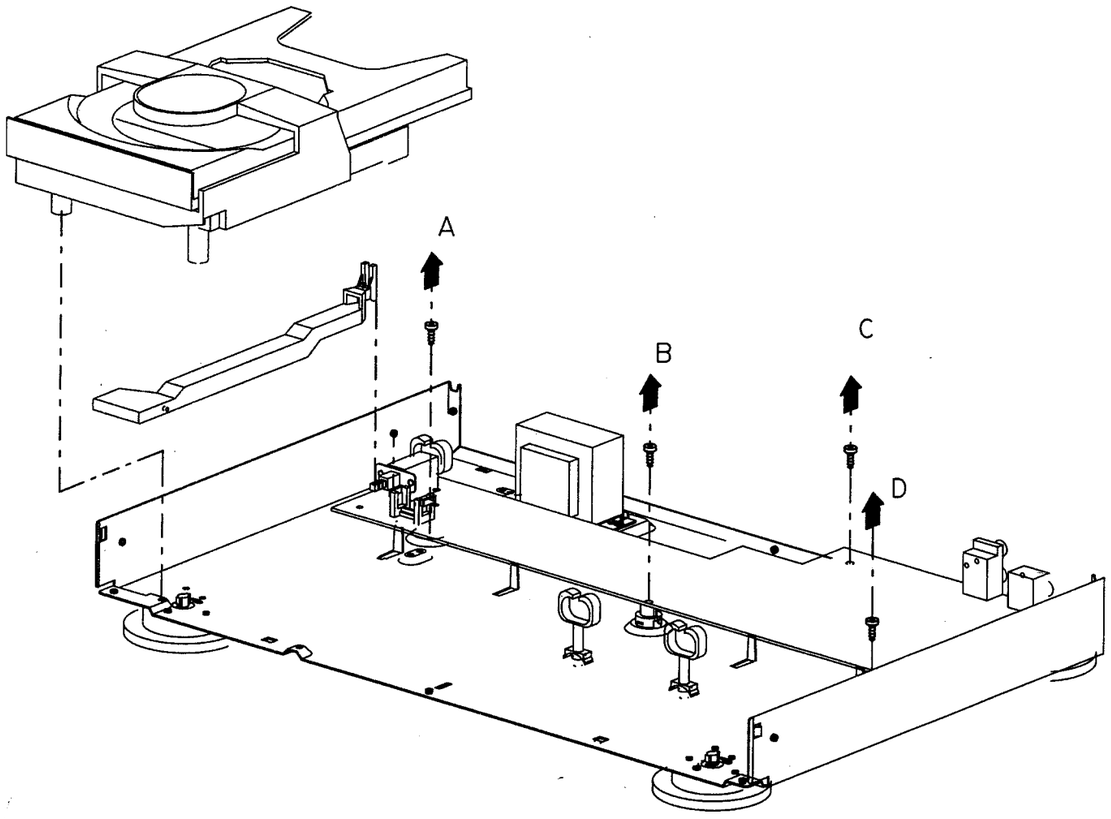
HAS.1067

DEMOUNTING OF LOADER



HAS.1068

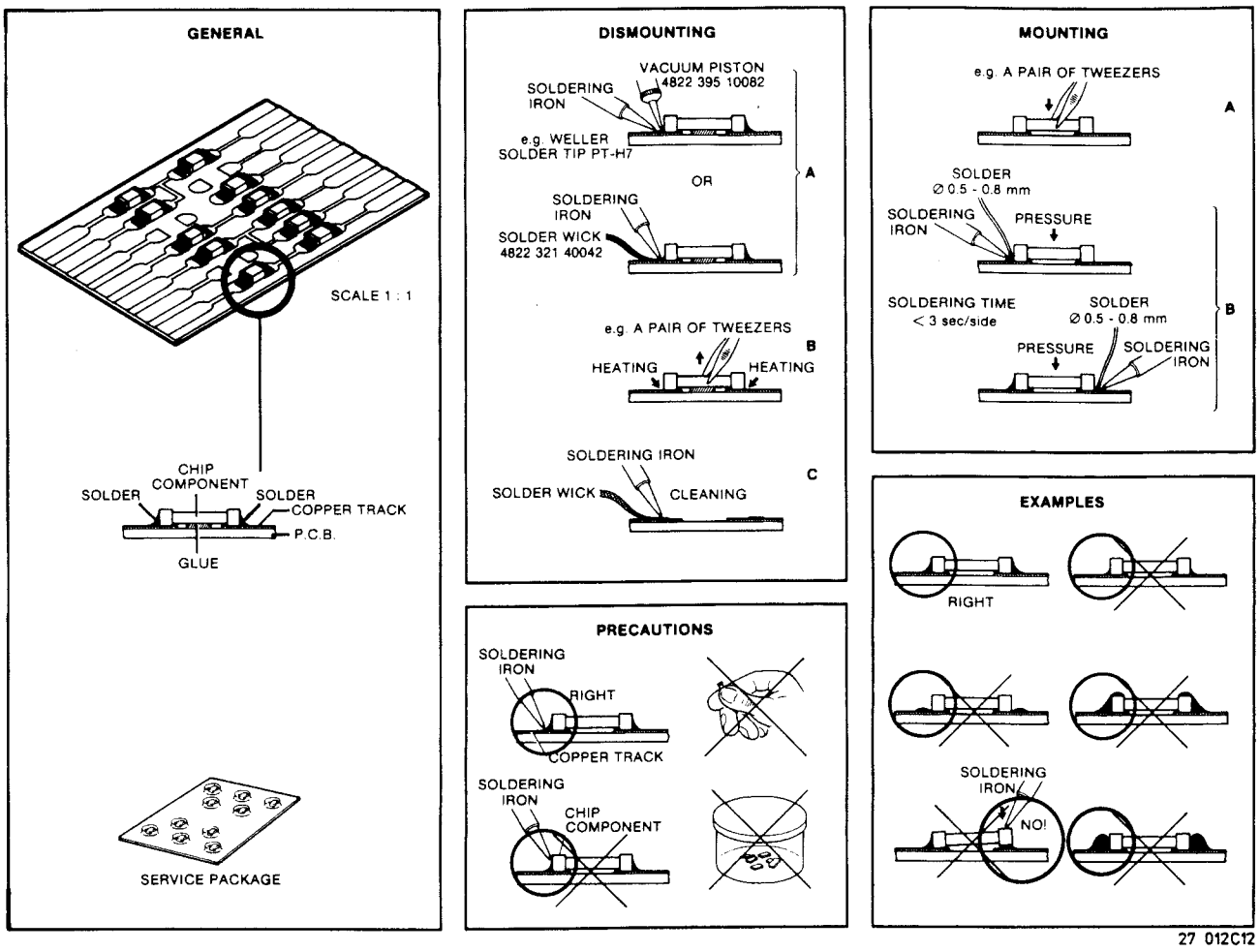
DEMOUNTING OF MONOBOARD



HAS.I069

SERVICING HINTS

In the set chip components have been applied. For disassembly and assembly of chip components see the figure below.



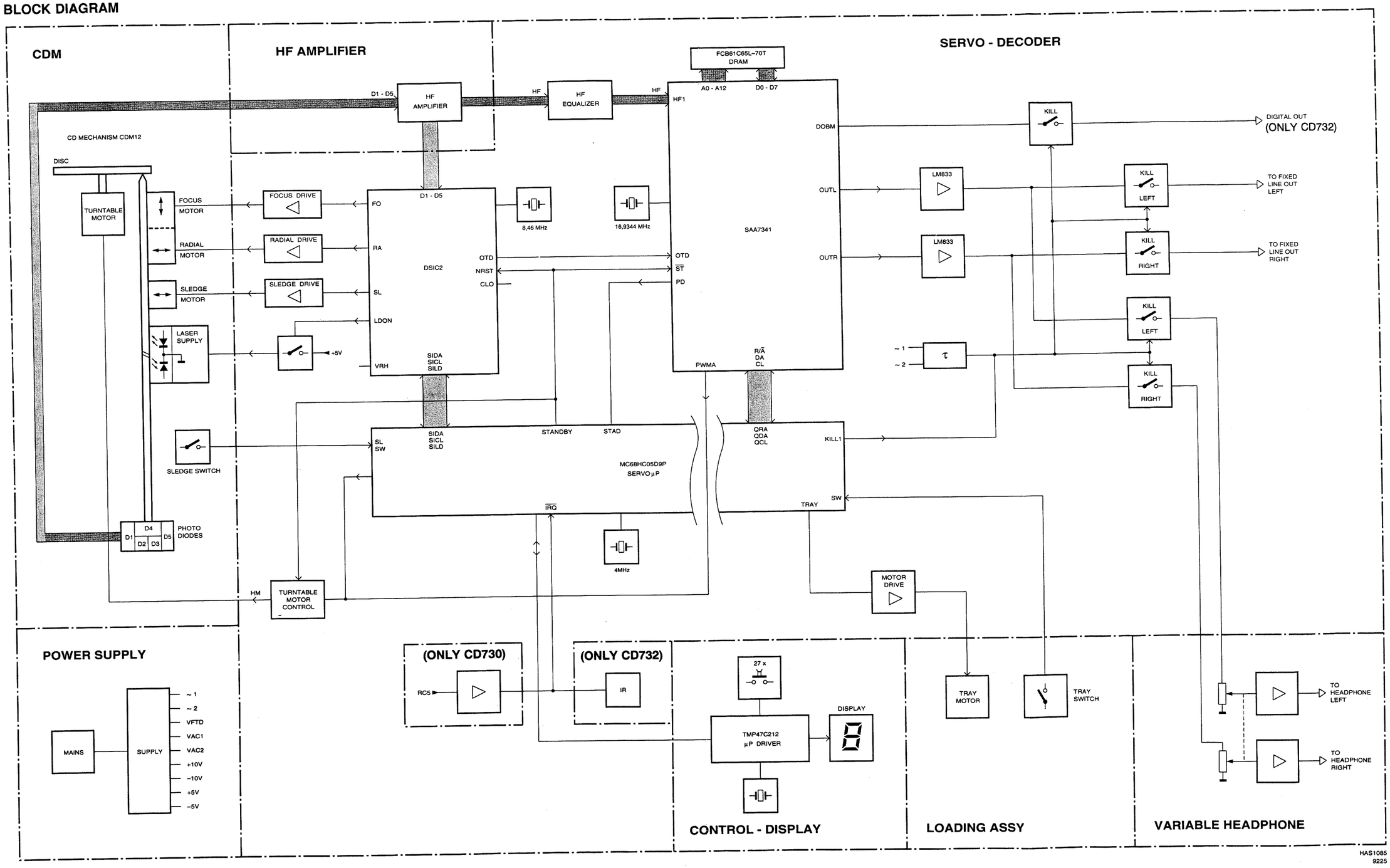
27 012C12

SERVICE TOOLS

Audio signal disc	4822 397 30184
Disc without errors (test disc 5) + disc with DO errors, black spots and fingerprints (test disc 5A	4822 397 30096
Disc (65 min 1kHz)without pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204

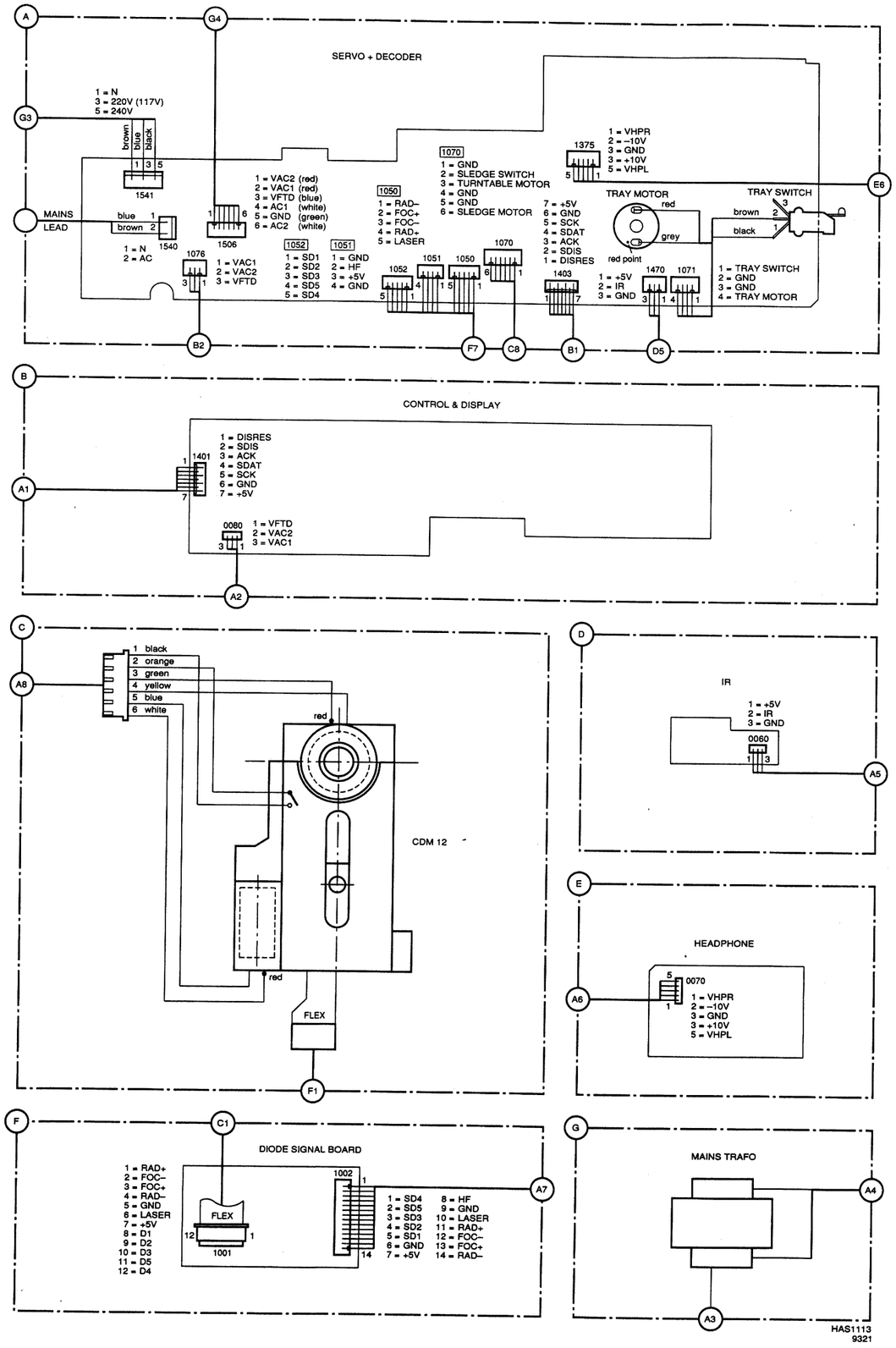
A0-A12	- Address outputs to external RAM
AM	- Additional mute
CFB	- Data slicer feedback output to capacitor
CL	- Microprocessor interface clock input
CLO	- Clock output
D0-D7	- Data inputs/outputs to external RAM
D1-D4	- Central diode signal input
DA	- Microprocessor interface data input/putput line
DE1L	- Pin 1 for external de-emphasis capacitor and resistor
DE1R	- Pin 1 for external de-emphasis capacitor and resistor
DE2L	- Pin 2 for external de-emphasis capacitor and resistor
DE2R	- Pin 2 for external de-emphasis capacitor and resistor
DEEM	- Output for external de-emphasis switches
DOBM	- Digital audio output
FO	- Focus actuator output
HFD	- High-frequency detector
HFI	- Inverting data slicer input
HFI	- Non-inverting data slicer input
HM	- Motor control signal
IREF	- Current reference output
KO	- Kill out
KTC	- Kill time capacitor connection
LDON	- Laser drive on
MACC	- Motor accelerate signal
MBRA	- Motor brake signal
MHAL	- Hall effect detector for motor
NRST	- Reset input
OC	- VCO control
OTD	- Off track detector
OUTL	- Left channel output
OUTR	- Right channel output
PD	- Phase detector
PWMA	- Pulse width modulated motor control acceleration
PWMB	- Pulse width modulated motor control brake signal
R/A	- Request/acknowledge
R1-R2	- Satellite diode signal input
RA	- Radial actuator output
SD1-5	- Photodiode signals
SICL	- Serial interface clock
SIDA	- Serial interface data
SILD	- Serial interface load
SL	- Sledge output
ST	- Standby mode
TS1-TS2	- Test input
VddA	- Power supply analog part
VddD	- Power supply digital part
VddD	- Power supply digital part
VRH	- Reference input for A/D converter
VRL	- Reference input for A/D converter
VssA	- Ground analog part
VssD	- Ground digital part
WE	- Write enable
XIN	- Crystal oscillator input
XOUT	- Output to clock crystal
XTLI	- Oscillator input
XTLO	- Oscillator output
XTLR	- Oscillator reference

BLOCK DIAGRAM

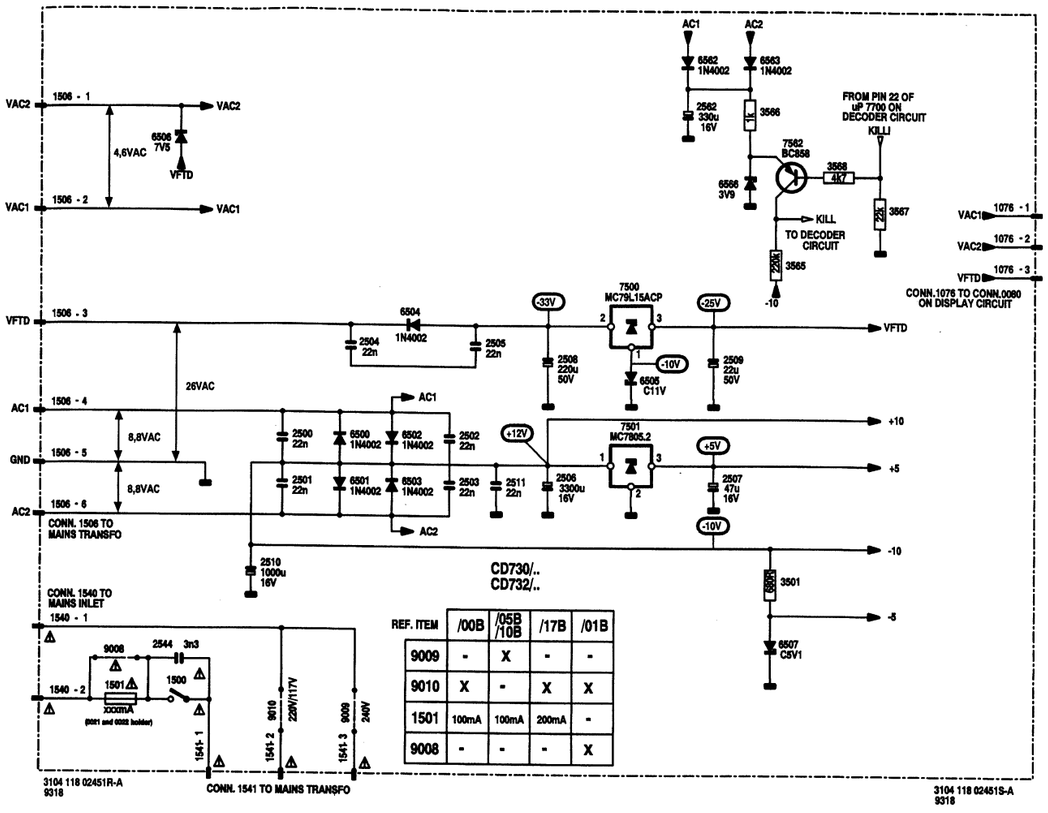


HAS1085
9225

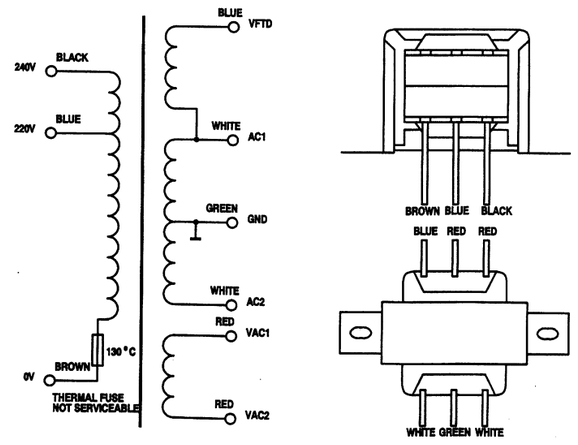
WIRING DIAGRAM



POWER SUPPLY DIAGRAM

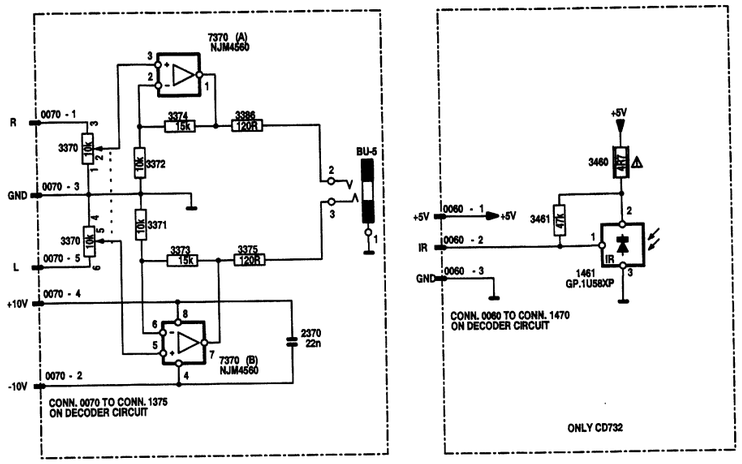


REF. ITEM	/00B	/05B /10B	/17B	/01B
9009	-	X	-	-
9010	X	-	X	X
1501	100mA	100mA	200mA	-
9008	-	-	-	X



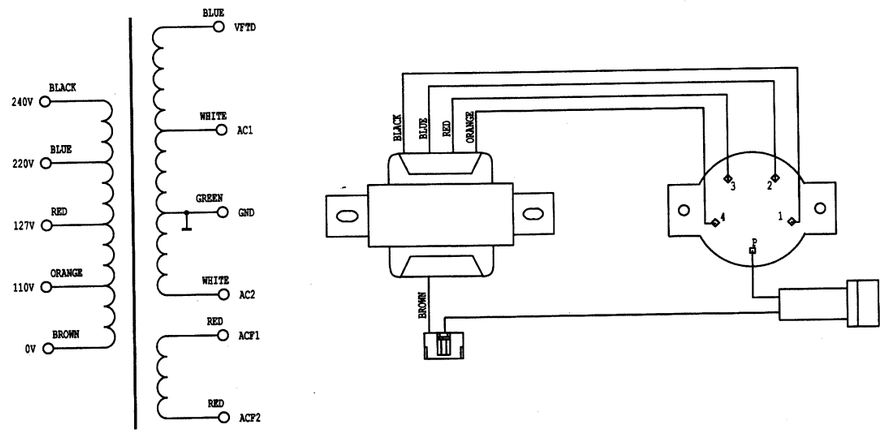
HAS1024
9227

HEADPHONE & IR CIRCUIT DIAGRAM



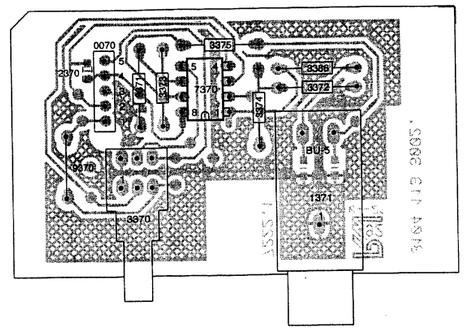
3104 118 02451S-E
9318

VOLTAGE SELECTOR



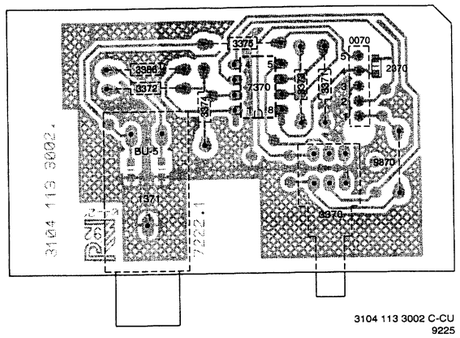
HAS1055
9213

HEADPHONE PANEL COMPONENT SIDE



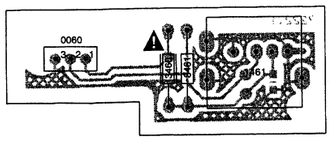
3104 113 3002 C-COMP
9225

SOLDER SIDE



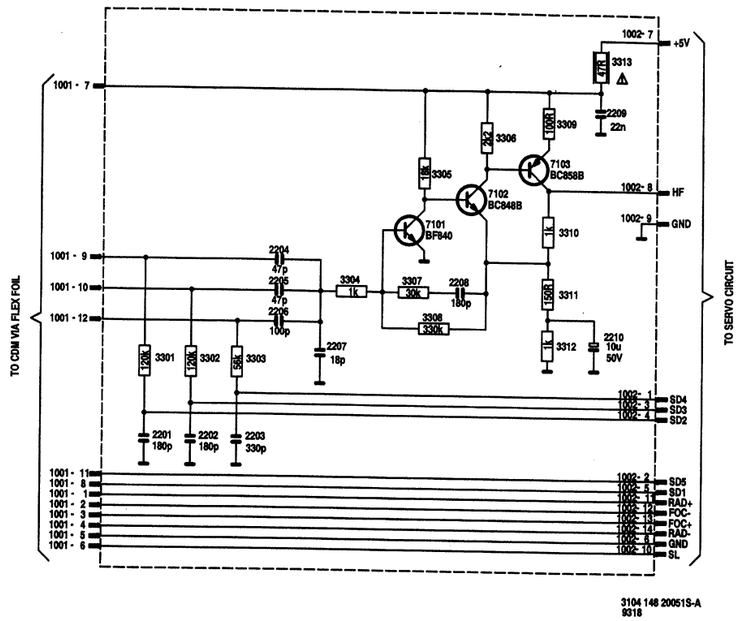
3104 113 3002 C-CU
9225

IR PANEL



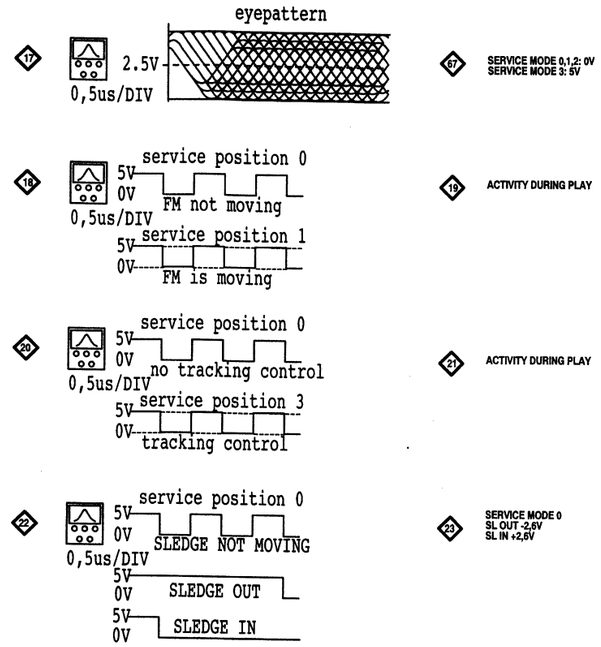
3104 113 3002 D-COMP
9225

HF CIRCUIT DIAGRAM

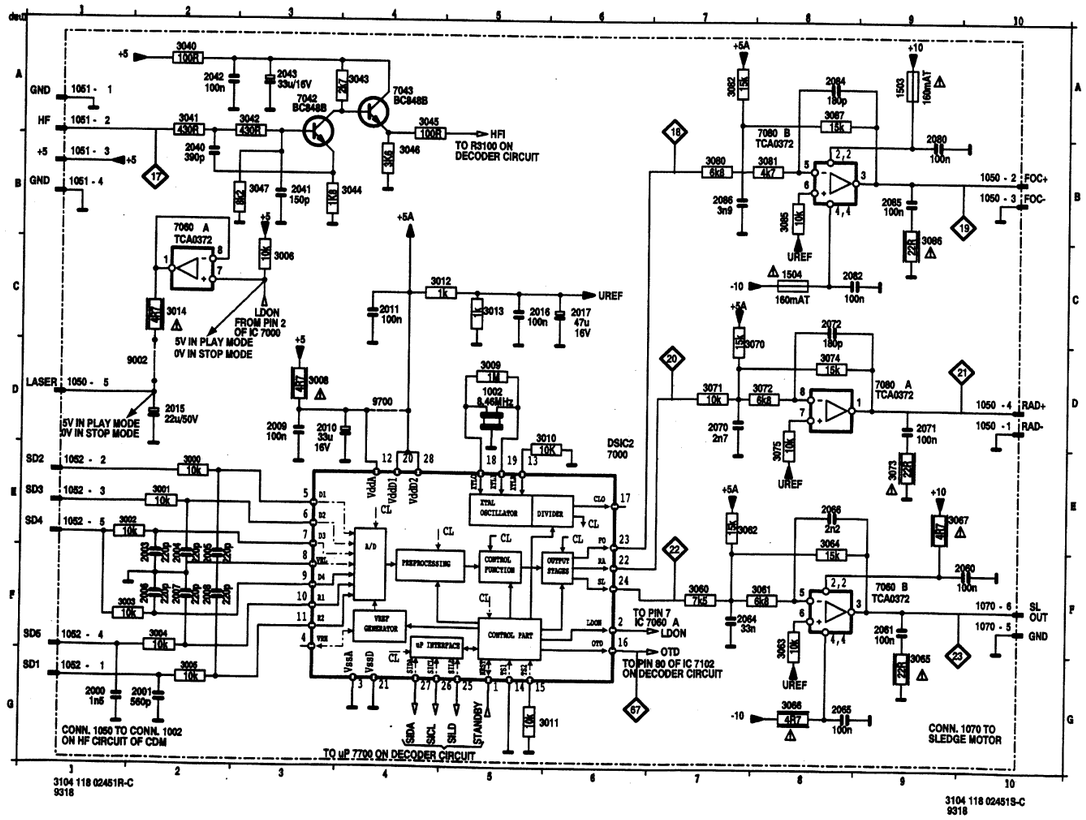


HF PANEL CAN BE ORDERED WITH SERVICE CODE 4822 214 51946

SERVO CIRCUIT DIAGRAM



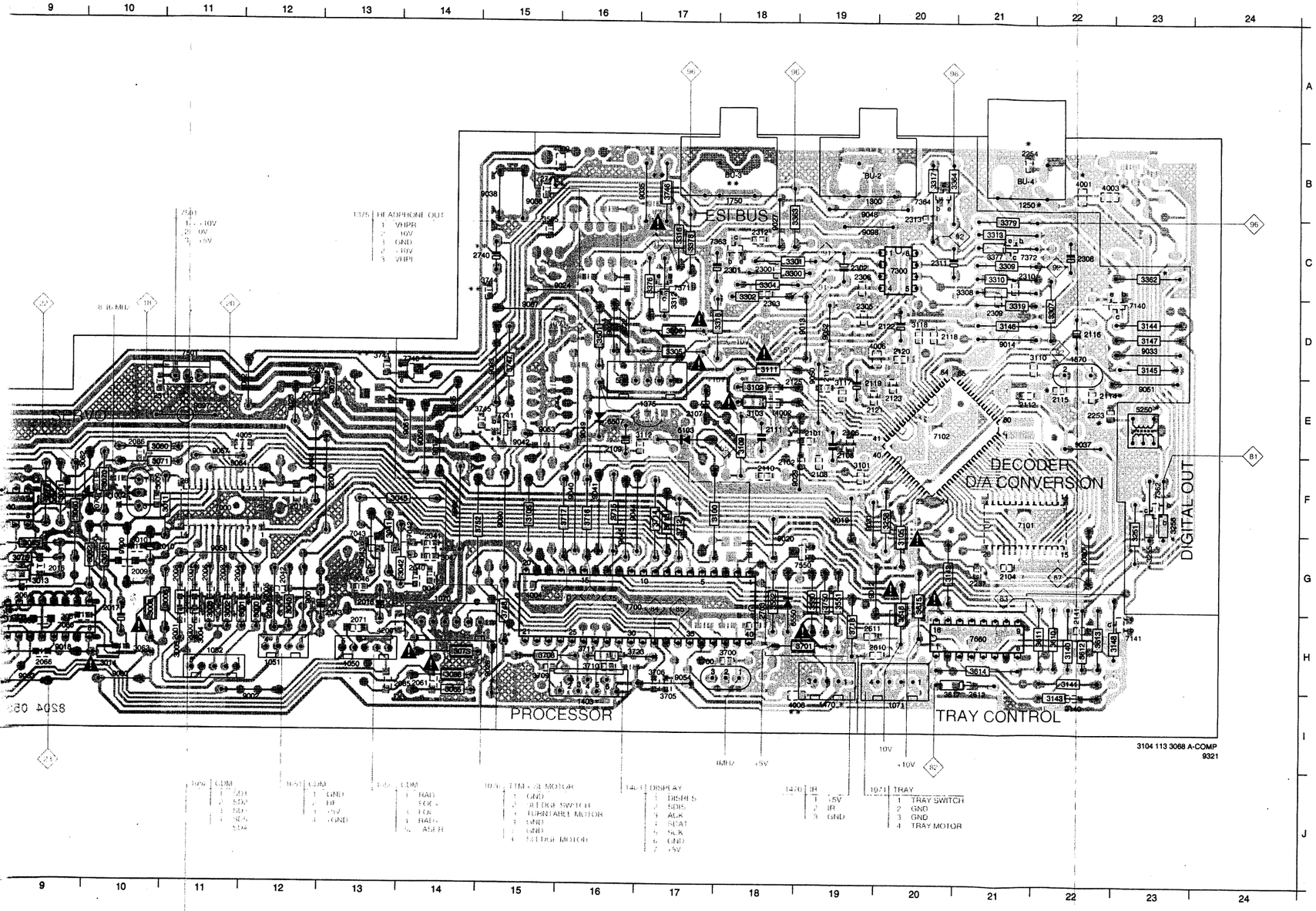
1002 D 5 1050 D 1 1050 D 1 1050 D10 1050 D10 1050 B10 1050 B10 1051 B 1
1051 A 1 1051 A 1 1051 A 1 1052 G 1 1052 G 1 1052 F 1 1052 E 1 1052 E 1
1052 E 1 1070 F10 1070 F10 1503 A 9 1504 C 8 2000 G 1 2001 G 2
2003 F 2 2004 F 2 2005 F 2 2006 F 2 2007 F 2 2008 F 2 2009 D 3
2010 D 3 2011 C 4 2015 C 5 2016 C 5 2040 B 2 2041 B 3
2042 A 2 2043 A 3 2060 F10 2061 F 2 2064 F 8 2065 G 8 2066 E 8
2070 D 7 2071 D 6 2072 C 8 2080 B 8 2082 C 8 2084 A 8 2085 B 9
2086 B 7 3001 E 2 3002 E 2 3003 F 2 3004 F 2 3005 G 2
3006 C 3 3008 C 3 3009 D 5 3010 D 6 3011 C 6 3012 C 4 3013 C 5
3014 C 2 3040 A 2 3041 A 2 3042 A 3 3043 A 4 3044 B 4 3045 A 4
3046 B 4 3047 B 3 3060 F 7 3061 F 8 3062 F 7 3063 F 8 3064 E 8
3065 G 9 3066 E10 3071 D 7 3072 D 8 3073 E 9
3074 D 8 3075 D 8 3080 B 8 3081 B 8 3082 A 7 3085 B 8 3086 B 9
3087 A 8 7000 E 5 7042 A 3 7043 A 4 7060 B 2 7060 F 9 7080 A 8
7080 D 9 9002 D 2 9700 D 4



SERVO & DECODER PANEL SOLDER SIDE

| | | |

3044	G14	3067	I8	3086	H14	3112	E16	3148	H23	3307	D22	3363	C18	3566	H6	3700	H18	3715	F16	3750	G19	5250	E23	6562	H6	7141	H23	7660	H21	9017	F14	9030	G22	9044	F18	9057	F11	9085	E14
3045	F13	3070	F10	3087	F7	3117	E19	3251	G23	3308	C20	3364	B20	3567	G7	3701	H19	3716	F16	3752	G15	6103	E17	6563	G6	7300	C20	7700	G16	9018	H9	9031	F19	9045	G16	9058	G11	9087	D15
3046	G13	3071	F10	3100	F18	3118	D20	3255	G23	3309	C21	3376	C17	3568	G7	3705	I17	3717	F16	4001	B22	6500	F6	6566	H5	7362	F23	7740	D14	9019	F19	9033	D23	9048	B19	9061	E14	9090	F15
3047	G14	3072	F9	3101	F19	3140	H22	3256	F23	3310	C21	3377	C21	3610	H22	3706	H17	3718	H19	4002	E18	6501	F6	7000	F11	7363	C17	7741	E15	9020	G18	9034	D16	9049	E16	9062	F14	9091	G8
3060	F9	3073	H14	3102	E18	3141	H22	3258	F20	3312	D17	3378	C17	3611	H22	3708	H15	3723	H16	4003	B22	6502	F5	7042	G14	7364	B20	9001	G12	9021	F6	9035	B17	9050	E19	9063	H9	9092	E12
3081	H9	3074	F8	3103	E18	3142	G20	3300	C18	3313	C21	3379	C21	3612	H22	3709	H15	3741	D13	4004	G15	6503	F6	7043	G13	7371	C17	9002	I12	9022	D16	9036	B15	9051	E23	9064	F11	9093	E15
3082	G10	3075	G9	3105	G20	3143	I22	3301	C18	3316	C17	3501	D16	3613	H22	3710	H16	3744	C14	4005	E11	6504	F5	7060	H9	7372	C21	9009	E4	9023	E12	9037	E22	9052	D19	9068	F12	9097	E11
3063	H10	3080	F10	3106	F15	3144	D23	3302	D18	3317	B20	3550	G19	3614	H21	3711	H16	3745	E14	4006	D19	6505	G5	7080	F8	7500	G5	9010	F4	9024	C15	9038	B14	9053	E15	9070	E7	9098	C19
3064	H8	3081	F9	3109	E18	3145	D23	3304	C18	3318	D18	3551	G19	3615	H20	3712	G17	3746	B17	4008	I18	6506	F5	7101	F21	7501	D11	9012	G19	9026	H15	9040	F16	9054	H17	9071	F6	9200	F13
3065	I14	3082	F10	3110	D21	3146	D21	3305	D17	3319	D21	3552	G18	3616	H20	3713	F17	3747	D15	4009	B15	6507	E16	7102	E20	7550	G18	9013	D19	9027	C18	9041	F16	9055	F7	9072	E13	9201	H12
3066	H8	3085	G9	3111	D18	3147	D23	3306	D17	3362	C23	3565	C15	3617	I20	3714	F17	3748	H15	4200	H13	6550	H19	7140	D23	7562	I5	9014	D21	9029	F19	9042	E15	9056	E14	9080	H10	9700	G10



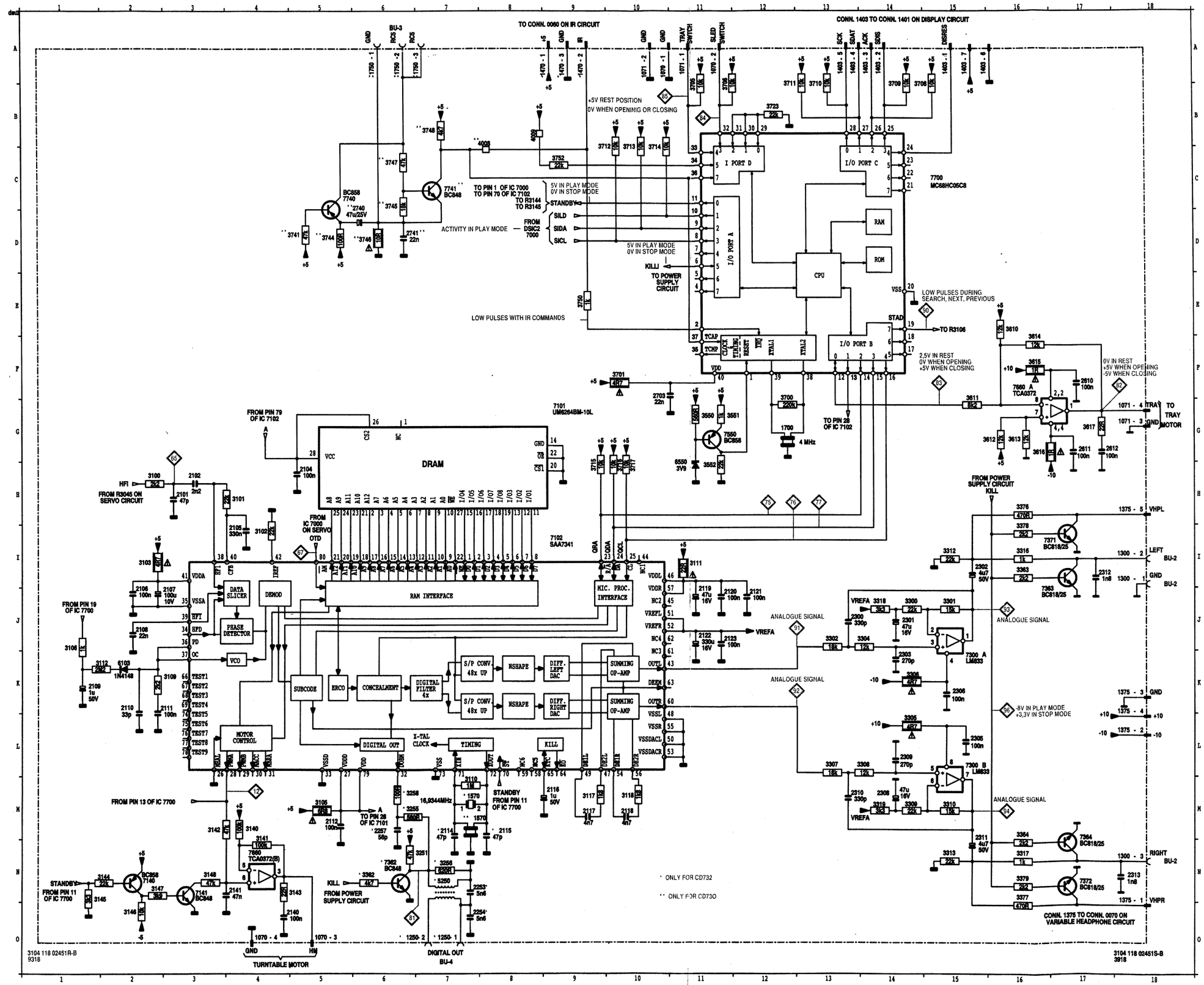
SERVO & DECODER PANEL COMPONENT SIDE

| | | |

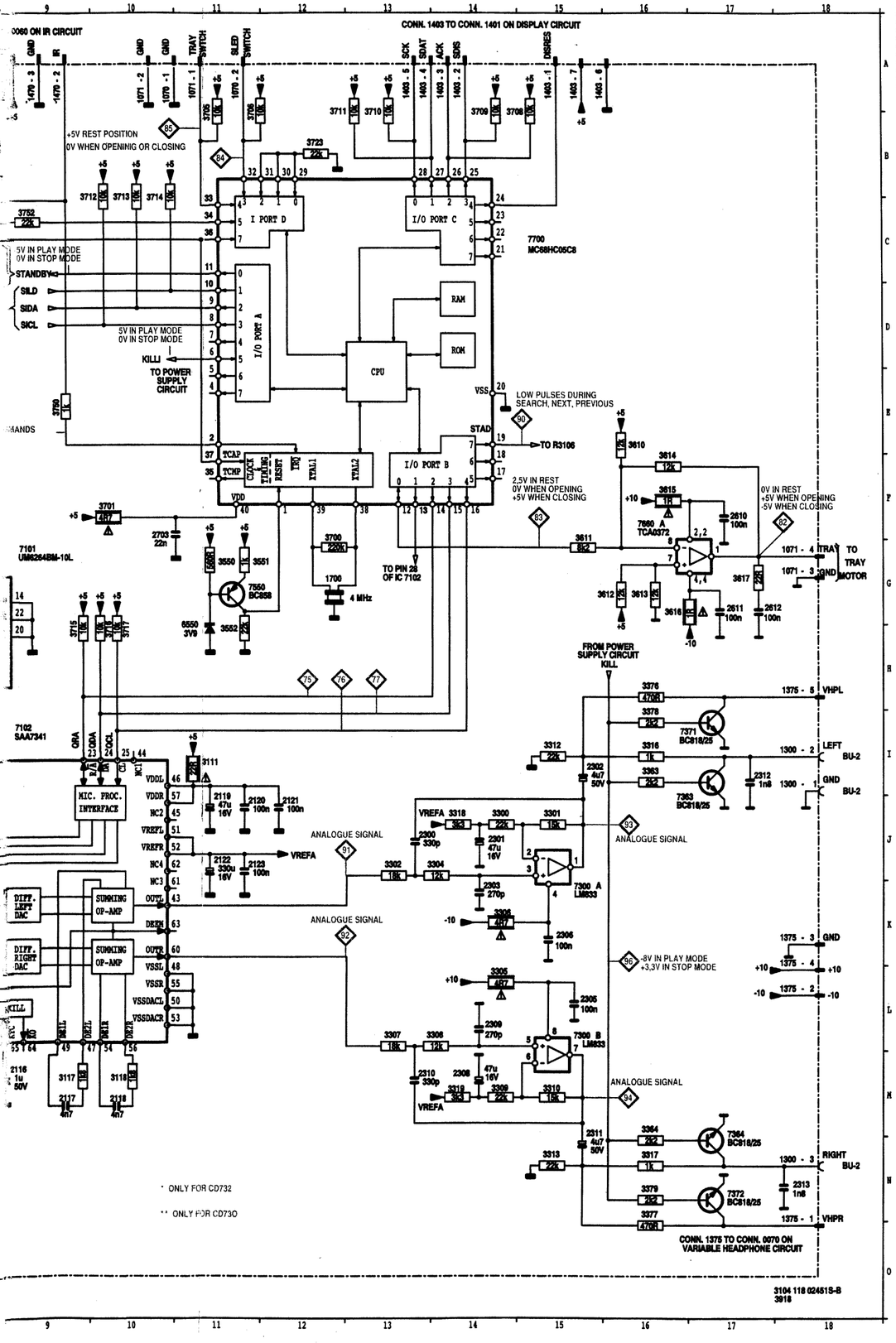
ENT SIDE

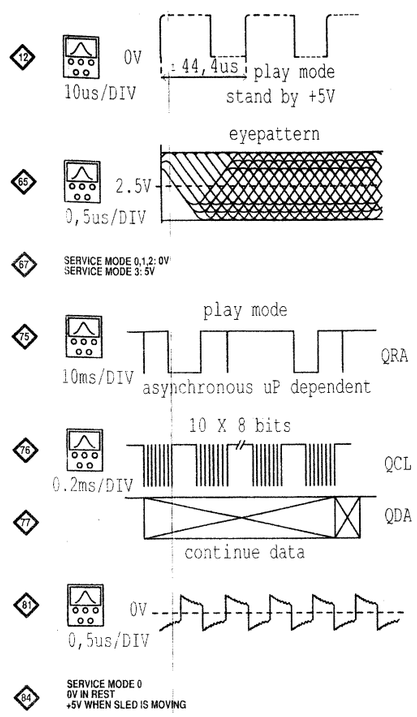
| | | |

DECODER CIRCUIT DIAGRAM

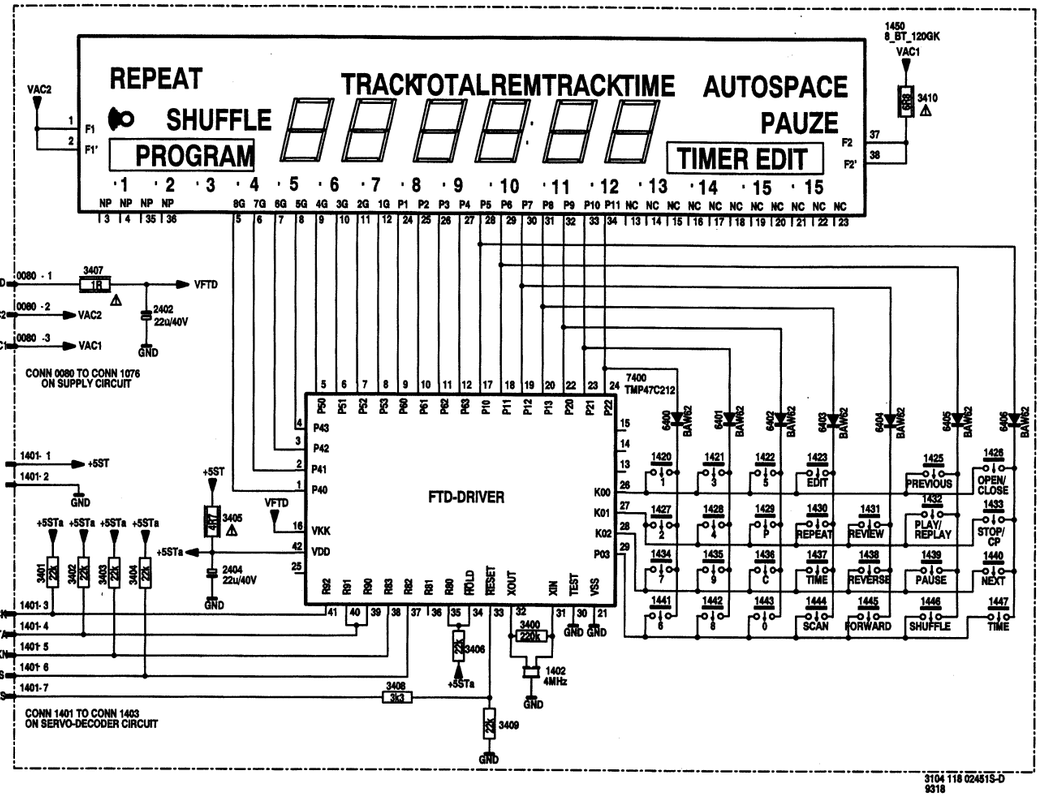


72 0V 10us/DIV
85 2.5V 0,5us/DIV
87 SERVICE MODE 0,1,2: 0V SERVICE MODE 3: 5V
75 10ms/DIV asynchr
76 0.2ms/DIV
77
81 0V 0,5us/DIV
84 SERVICE MODE 0 0V IN REST +5V WHEN SLED IS MOVING

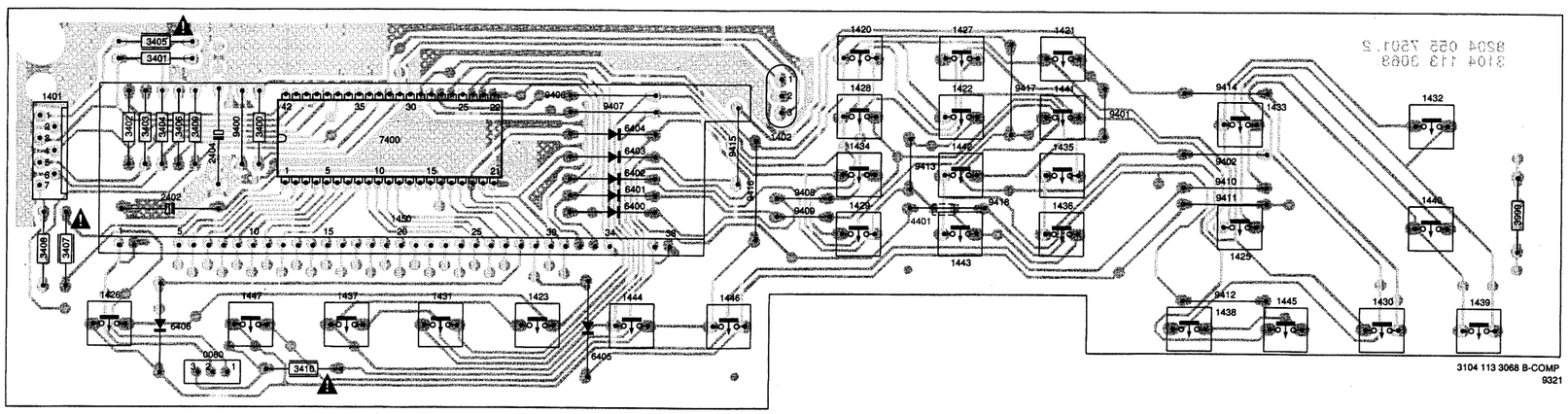

CONN. 1403 TO CONN. 1401 ON DISPLAY CIRCUIT
0060 ON IR CIRCUIT
GND
IR
GND
GND
TRAY SWITCH
SLED SWITCH
SCK
SDAT
SCK
SDS
DISRES
+5V REST POSITION
0V WHEN OPENING OR CLOSING
I PORT D
I/O PORT C
7700
MC68HC05C8
5V IN PLAY MODE
0V IN STOP MODE
STANDBY
SILD
SIDA
SICL
I/O PORT A
RAM
ROM
CPU
5V IN PLAY MODE
0V IN STOP MODE
KILL
TO POWER SUPPLY CIRCUIT
VSS
LOW PULSES DURING SEARCH, NEXT, PREVIOUS
TO R3106
STAD
TCAP
TCMP
CLOCK
TRACK
RESET
TDO
XTAL1
XTAL2
I/O PORT B
2,5V IN REST
0V WHEN OPENING
+5V WHEN CLOSING
VDD
0V IN REST
+5V WHEN OPENING
-5V WHEN CLOSING
7660 A
TCA0372
7101
UMS264BM-10L
TO PIN 28
OF IC 7102
4 MHz
TO TRAY MOTOR
FROM POWER SUPPLY CIRCUIT
KILL
7102
SAA7341
QRA
QDA
QCL
MIC. PROC. INTERFACE
VDDL
VDDR
NC2
VREFL
VREFR
NC4
NC3
OUTL
DEEM
OUTR
VSSL
VSSR
VSSDACL
VSSDACR
ANALOGUE SIGNAL
VREFA
SUMMING OP-AMP
DIFF. LEFT DAC
DIFF. RIGHT DAC
-8V IN PLAY MODE
+3,3V IN STOP MODE
7300 A
LM833
7300 B
LM833
7371
BC818/25
7363
BC818/25
7364
BC818/25
7372
BC818/25
LEFT
RIGHT
VHPL
VHPR
GND
BU-2
CONN. 1375 TO CONN. 0070 ON VARIABLE HEADPHONE CIRCUIT
* ONLY FOR CD732
** ONLY FOR CD730
3104 118 02451S-B
3918

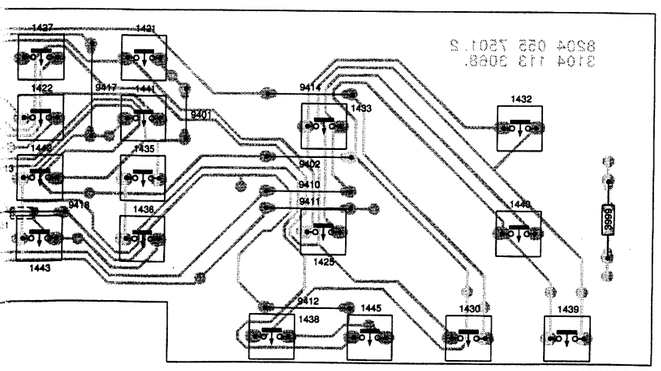

0V
10us/DIV
44,4us
play mode
stand by +5V
eyepattern
2.5V
0,5us/DIV
SERVICE MODE 0,1,2: 0V
SERVICE MODE 3: 5V
play mode
10ms/DIV
asynchronous uP dependent
QRA
10 X 8 bits
0.2ms/DIV
QCL
QDA
continue data
0V
0,5us/DIV
SERVICE MODE 0
0V IN REST
+5V WHEN SLED IS MOVING

CONTROL & DISPLAY CIRCUIT DIAGRAM



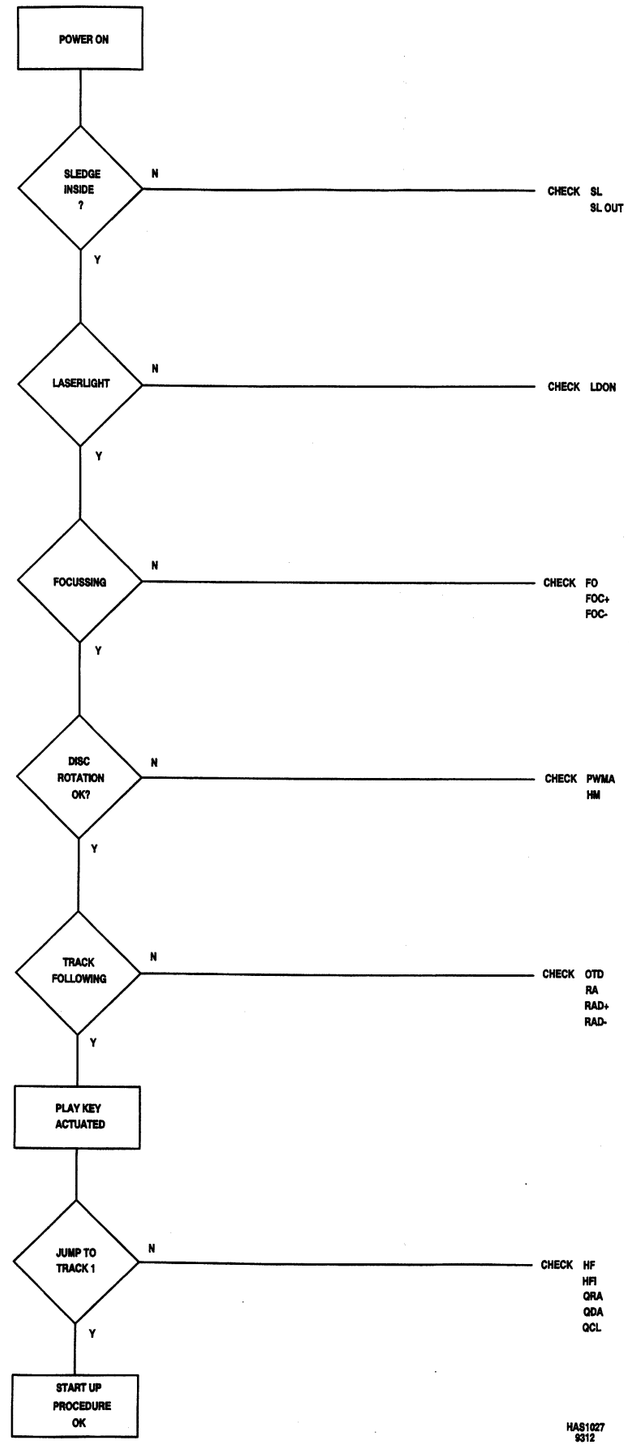
CONTROL & DISPLAY PANEL





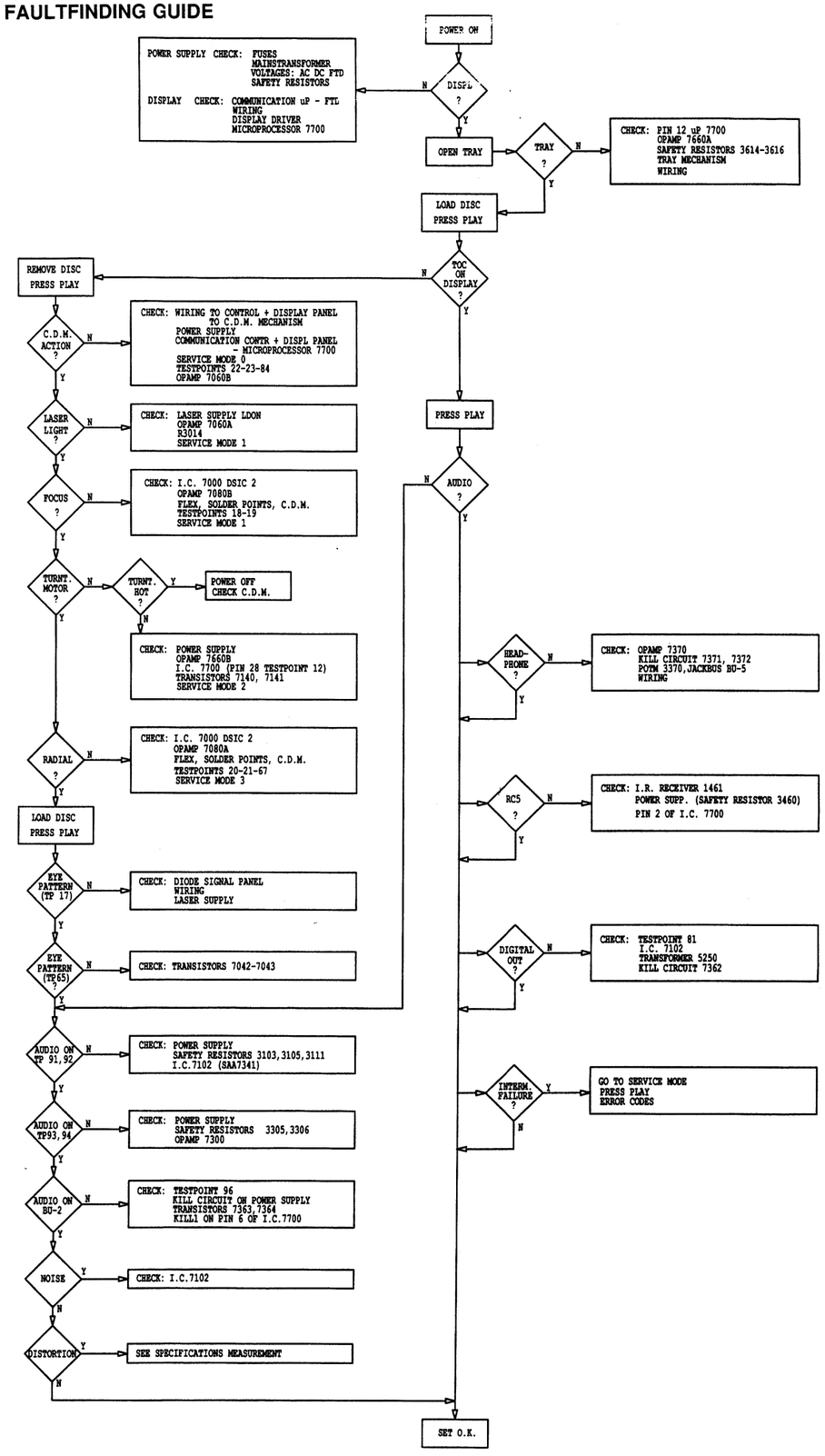
3104 113 3068 B-COMP
9321

START UP PROCEDURE



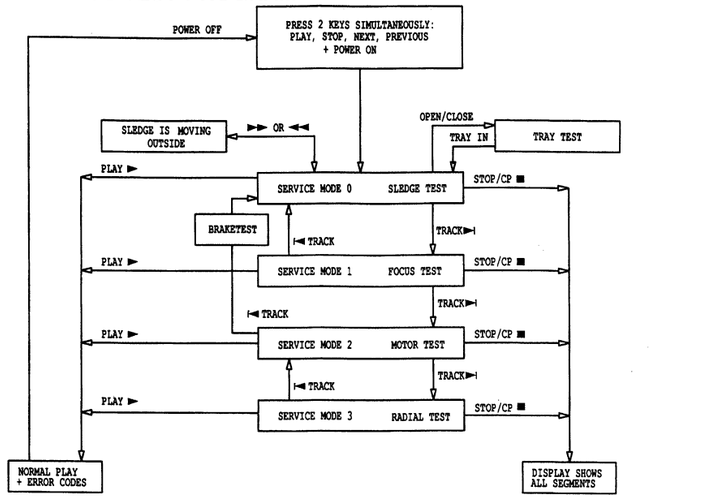
HAS1027
9312

FAULTFINDING GUIDE



HAS1089
9226

SERVICE TEST PROGRAM



HAS1025
9202

ERROR CODE TABLE

SYSTEM ERRORS

Er 02	Focus error
Er 07	Subcode error
Er 08	TOC error
Er 09	Decoder CD4+ error
Er 10	Radial error
Er 11	Non fatal sledge error
Er 12	Fatal sledge error
Er 13	Turntable motor error
Er 31	Search time out error
Er 32	Binary search time out error
Er 33	Index not found
Er 34	Relative time not found

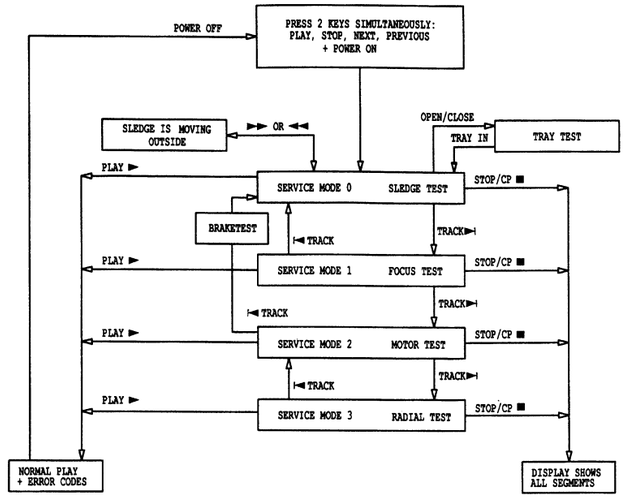
OPERATING ERROR MESSAGES

40 Err	" GO INTO STOP "
41 Err	" GO INTO PLAY "
42 Err	" NO PROGRAM "
43 Err	" PRESS REVIEW "
44 Err	" EDIT ACTIVE "
45 Err	" CD DUBBING ACTIVE "
46 Err	" PROGRAM CANCELLED "
47 Err	" USE 0-9 "
48 Err	" WRONG TRACK "
49 Err	" WRONG TIME "
50 Err	" NO EDIT POSSIBLE "

CLASS 3B
LASER PRODUCT

CAUTION INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTTEILYLLE ÄLÄ KATSO SÄTEESEN
VARNING OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
ADVERSEL USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UNSAETTELSE FOR STRÅLING
DANGER INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
VORSICHT UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN

SERVICE TEST PROGRAM



HAS1025
9202

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VARNING OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
ADVERSEL USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UNSAETTELSE FOR STRÅLING
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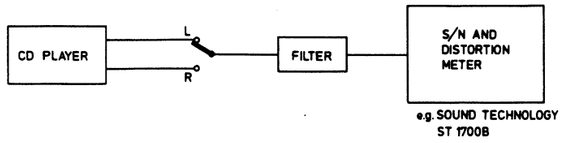
HAS1089
9226

SPECIFICATIONS MEASUREMENT

Signal	Mode	◇	▭	▯	Remarks
BU2-L	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-L	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12

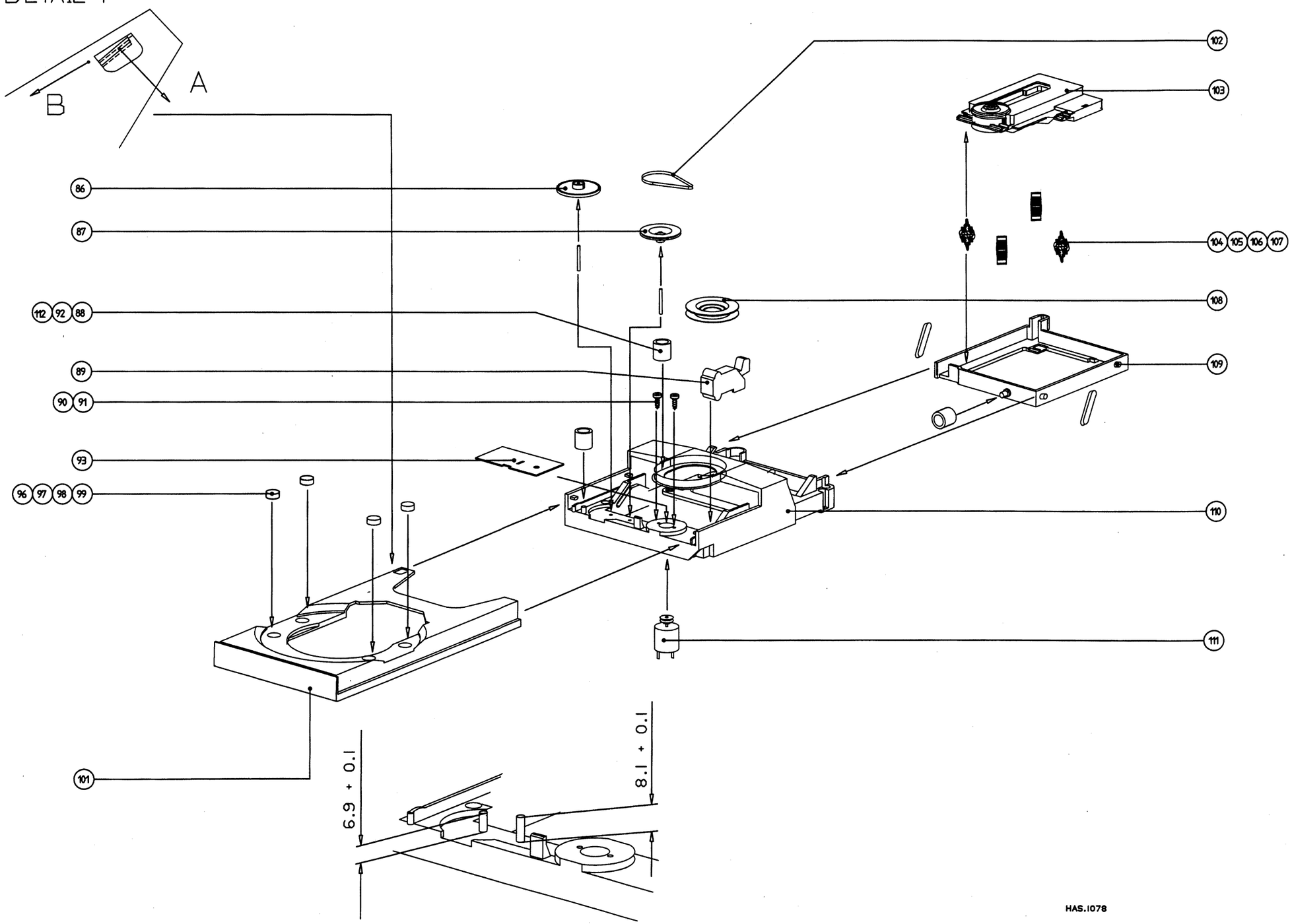
T-23366M

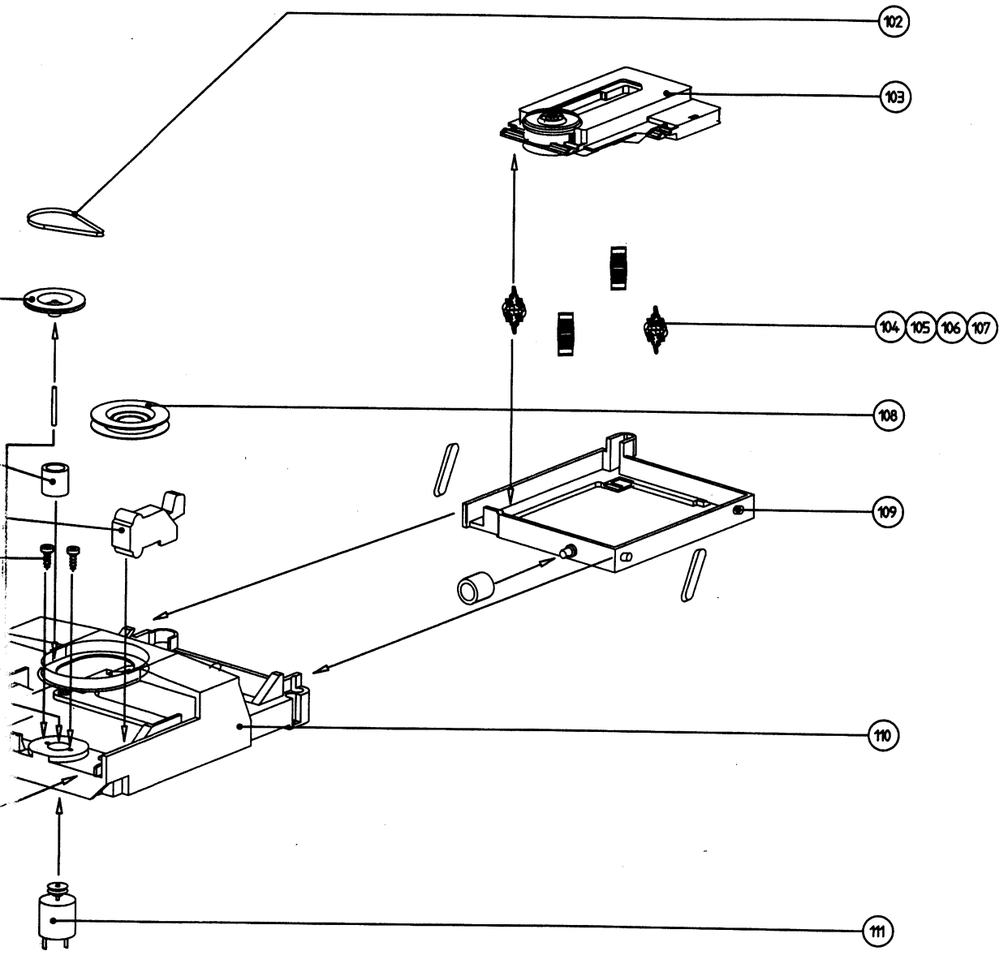
Filter = 13th order filter 4822 395 30204



30 459 A12

LOADER


DETAIL I
B
A
86
87
112
92
88
89
90
91
93
96
97
98
99
101
102
103
104
105
106
107
108
109
110
111
6.9 + 0.1
8.1 + 0.1
HAS.1078



8.1 + 0.1

HAS.1078

MECHANICAL PARTSLIST

Partslist cabinet

1		4822 444 40677	FRONT CD730
1		4822 444 40678	FRONT CD732
15		4822 410 61966	KNOBUNIT(NOSE)
16		4822 410 62736	KNOBUNIT(10-KEY)
17		4822 410 62737	KNOBUNIT
21		4822 459 10887	WORDMARK
22		4822 450 61895	WINDOW
23		4822 450 61894	IR WINDOW(only CD732)
51		4822 410 61965	KNOB
52		4822 535 93317	POWERROD
53		4822 413 41722	VOLUME KNOB
54		4822 462 71808	CAP
71		4822 444 40679	TRAY FRONT
151		4822 444 60843	COVER
251		4822 462 41715	FOOT
255		4822 462 41479	FELT
283	▲	4822 532 60948	BUSHING
300	▲	4822 321 10809	MAINS CORD /00B
301	▲	4822 321 10811	MAINS CORD /05B
308		4822 321 22832	CINCH CABLE SBC1072
340		4822 736 21501	INSTRUCTION FOR USE
365		4822 218 10411	REM CONTR RD6830(only CD732)

Partslist loader

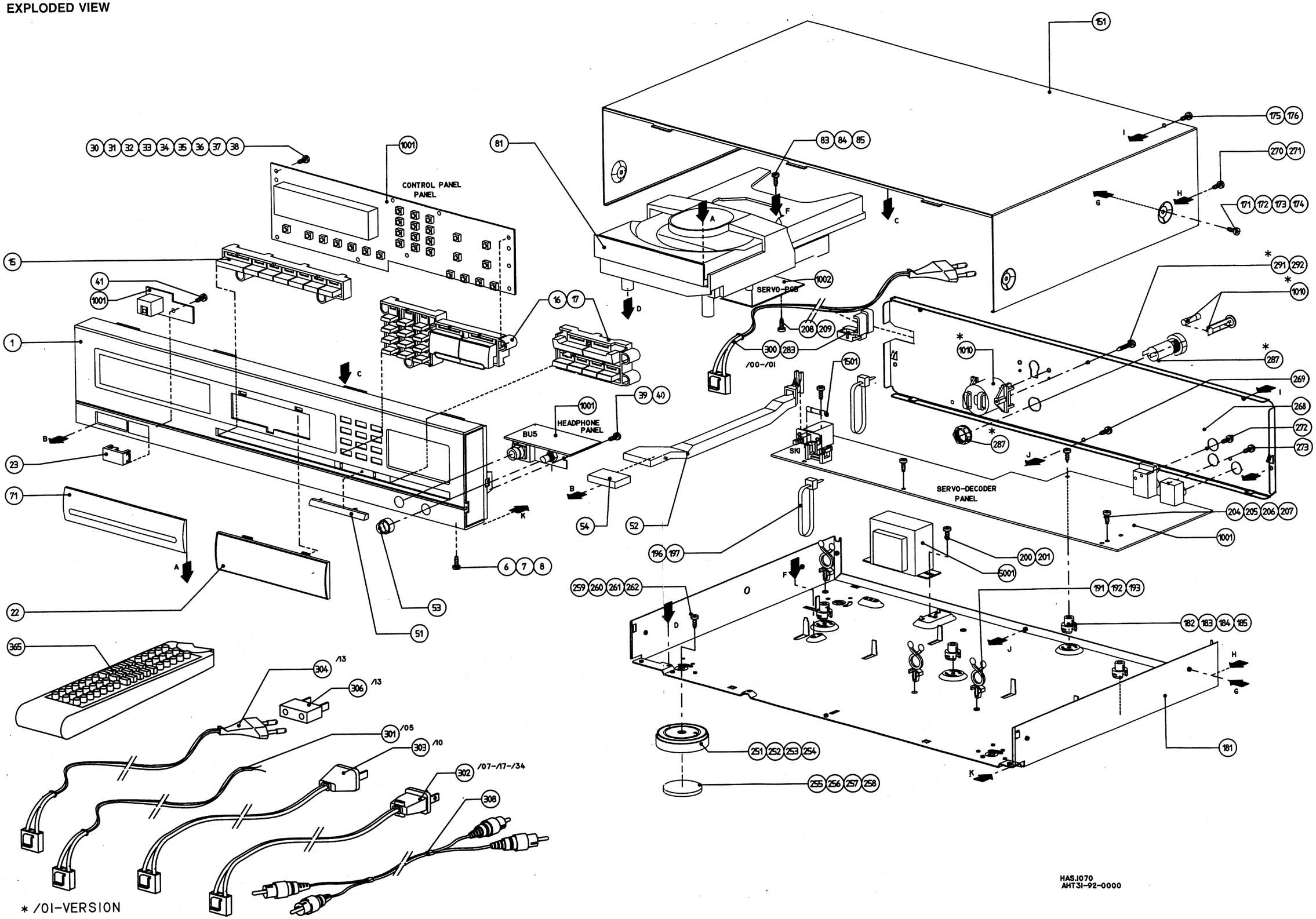
86	4822 528 81464	DRIVE PINION
87	4822 528 81465	PULLEY
88	4822 325 60379	DAMPING GROMMET
89	4822 276 13222	SWITCH
93	4822 444 60816	COVER PLATE
96	4822 325 80511	ORNAMENTAL TULE
101	4822 444 50679	SLIDE
102	4822 358 31168	BELT
103	4822 691 30278	CDM12 MECHANISM
104	4822 325 50215	SUSPENSION
108	4822 402 61412	CLAMPER ASSY
109	4822 464 50895	SUBCHASSIS
110	4822 464 50896	CHASSIS
111	4822 361 21492	MOTOR

Not mentioned parts are only available during production period on special request.

Screws

Taptite	M3x6:	6,7,8	Plastite	M3x10:	39,40
		83,84,85			41
		171,172,173,174			268
		175,176			273
		200,201	Plastite	M3x12:	30,31,32,33,34,35,36,37,38
		269,270,271,272	Plastite	M3,5x8:	259,260,261,261
Taptite	M3x16:	204,205,206,207			

EXPLODED VIEW



HAS.1070
AHT31-92-0000

ELECTRICAL PARTSLIST

SERVO & DECODER PANEL

MISCELLANEOUS

BU-2		4822 265 20553	ANALOG OUT SOCKET
BU-3		4822 265 20543	RC5 SOCKET (CD690)
BU-4		4822 267 31457	DIGITAL OUT (CD692)
1002		4822 242 73557	RESONATOR 8,46MHz
1500	▲	4822 276 13277	SWITCH POWER ON/OFF
1503	▲	4822 071 51601	FUSE 160mA
1504	▲	4822 071 51601	FUSE 160MA
1570		4822 242 81151	CRYSTAL 16,9344MHz
1700		4822 242 72527	RESONATOR 4 MHz

CAPACITORS

2000		5322 122 31865	1,5nF 10% 63V
2001		5322 116 80853	560pF 5% 63V
2003		4822 122 33575	220pF 10% 500V
2004		4822 122 33575	220pF 10% 500V
2005		4822 122 33575	220pF 10% 500V
2006		4822 122 33575	220pF 10% 500V
2007		4822 122 33575	220pF 10% 500V
2008		4822 122 33575	220pF 10% 500V
2009		4822 122 33496	100nF 10% 63V
2010		4822 124 40272	33µF 20% 16V
2011		4822 122 33496	100nF 10% 63V
2015		4822 124 41596	22µF 20% 50V
2016		4822 122 33496	100nF 10% 63V
2017		4822 124 40272	33µF 20% 16V
2040		4822 122 33172	390pF 5% 50V
2041		5322 122 33538	150pF 5% 63V
2042		4822 122 33496	100nF 10% 63V
2043		4822 124 40272	33µF 20% 16V
2060		4822 122 33496	100nF 10% 63V
2061		4822 122 33496	100nF 10% 63V
2064		4822 122 33342	33nF 10% 63V
2065		4822 122 33496	100nF 10% 63V
2066		4822 122 33175	2,2nF 20% 50V
2070		4822 122 32627	2,7nF 10% 50V
2071		4822 122 33496	100nF 10% 63V
2072		4822 126 10326	180pF 5% 63
2080		4822 122 33496	100nF 10% 63V
2082		4822 122 33496	100nF 10% 63V
2084		4822 126 10326	180pF 5% 63V
2085		4822 122 33496	100nF 10% 63V
2086		5322 126 10465	3,9nF 10% 63V
2101		5322 122 32452	47pF 5% 63V
2102		4822 122 33175	2,2nF 20% 50V
2104		4822 122 33496	100nF 10% 63V
2105		5322 121 42661	330nF 5% 63V
2106		4822 122 33496	100nF 10% 63V
2107		4822 124 41584	100µF 20% 10V
2108		5322 122 32654	22nF 10% 63V
2109		4822 124 40242	1µF 20% 63V
2110		5322 122 32659	33pF 5% 50V
2111		5322 121 42386	100nF 5% 63V
2112		4822 122 33496	100nF 10% 63V
2114		5322 122 32452	47pF 5% 63V
2115		5322 122 32452	47pF 5% 63V
2116		4822 124 40242	1µF 20% 63V
2117		5322 126 10223	4,7nF 10% 63V
2118		5322 126 10223	4,7nF 10% 63V
2119		4822 124 40433	47µF 20% 10V
2120		4822 122 33496	100nF 10% 63V
2121		4822 122 33496	100nF 10% 63V
2122		4822 124 40849	330µF 20% 16V
2123		4822 122 33496	100nF 10% 63V
2140		4822 122 33496	100nF 10% 63V
2141		4822 122 32542	47nF 10% 63V
2253		4822 122 32646	5,6nF 10% 50V
2254		4822 122 32646	5,6nF 10% 50V
2257		5322 122 32661	56pF 5% 50V
2300		5322 122 31863	330pF 5% 50V
2301		4822 124 40272	33µF 20% 16V
2302		4822 124 40246	4,7µF 20% 63V
2303		4822 122 33216	270pF 5% 50V
2305		4822 122 33496	100nF 10% 63V
2306		4822 122 33496	100nF 10% 63V
2308		4822 124 40272	33µF 20% 16V
2309		4822 122 33216	270pF 5% 50V
2310		5322 122 31863	330pF 5% 50V
2311		4822 124 40246	4,7µF 20% 63V
2312		4822 122 33219	1,8nF 10% 50V
2313		4822 122 33219	1,8nF 10% 50V
2500		5322 122 32654	22nF 10% 63V
2501		5322 122 32654	22nF 10% 63V
2502		5322 122 32654	22nF 10% 63V
2503		5322 122 32654	22nF 10% 63V
2504		5322 122 32654	22nF 10% 63V
2505		5322 122 32654	22nF 10% 63V
2506		4822 124 40784	3300µF 20% 16V
2507		4822 124 40272	33µF 20% 16V
2508		5322 124 22094	220µF 20% 50V
2509		4822 124 41596	22µF 20% 50V
2510		4822 124 40201	1000µF 20% 16V
2511		5322 122 32654	22nF 10% 63V
2544	▲	4822 126 10454	3,3nF 20% 400V
2562		4822 124 40849	330µF 20% 16V
2610		4822 122 33496	100nF 10% 63V
2611		4822 122 33496	100nF 10% 63V
2612		4822 122 33496	100nF 10% 63V
2703		5322 122 32654	22nF 10% 63V
2740		4822 124 40433	47µF 20% 25V
2741		5322 122 32654	22nF 10% 63V

RESISTORS

3000		4822 116 52233	10k 5% 0,5W
3001		4822 116 52233	10k 5% 0,5W
3002		4822 116 52233	10k 5% 0,5W
3003		4822 116 52233	10k 5% 0,5W
3004		4822 116 52233	10k 5% 0,5W
3005		4822 116 52233	10k 5% 0,5W
3006		4822 116 52233	10k 5% 0,5W
3008	▲	4822 052 10478	4Ω7 5% 0,33W
3009		4822 051 20105	1M 5% 0,1W
3010		4822 051 20103	10k 5% 0,1W
3011		4822 116 52233	10k 5% 0,5W
3012		4822 050 11002	1k 1% 0,4W
3013		4822 050 11002	1k 1% 0,4W
3014	▲	4822 052 10478	4Ω7 5% 0,33W
3040		4822 116 52175	100Ω 5% 0,5W
3041		4822 116 52223	430Ω 5% 0,5W
3042		4822 116 52223	430Ω 5% 0,5W
3043		4822 116 52263	2k7 5% 0,5W
3044		4822 051 20182	1k8 5% 0,1W
3045		4822 116 52175	100Ω 5% 0,5W
3046		4822 051 20362	3k6 5% 0,1W
3047		4822 051 20822	8k2 5% 0,1W
3060		4822 050 27502	7k5 1% 0,6W
3061		4822 051 20682	6k8 5% 0,1W
3062		4822 116 52244	15k 5% 0,5W
3063		4822 051 20103	10k 5% 0,1W
3064		4822 050 21503	15k 1% 0,6W
3065	▲	4822 052 10229	22Ω 5% 0,33W
3066	▲	4822 052 10478	4Ω7 5% 0,33W
3067	▲	4822 052 10478	4Ω7 5% 0,33W
3070		4822 116 52244	15k 5% 0,5W
3071		4822 116 52233	10k 5% 0,5W
3072		4822 116 52296	6k8 5% 0,5W
3073	▲	4822 052 10229	22Ω 5% 0,33W
3074		4822 116 52244	15k 5% 0,5W
3075		4822 116 52233	10k 5% 0,5W
3080		4822 116 52296	6k8 5% 0,5W
3081		4822 116 52283	4k7 5% 0,5W
3082		4822 116 52244	15k 5% 0,5W
3085		4822 116 52233	10k 5% 0,5W
3086	▲	4822 052 10229	22Ω 5% 0,33W
3087		4822 116 52244	15k 5% 0,5W
3100		4822 116 52256	2k2 5% 0,5W
3101		4822 051 20223	22k 5% 0,1W
3102		4822 116 52257	22k 5% 0,5W
3103	▲	4822 052 10478	4Ω7 5% 0,33W
3105	▲	4822 052 10688	6Ω8 5% 0,33W
3106		4822 050 11002	1k 1% 0,4W
3109		4822 116 52256	2k2 5% 0,5W
3110		4822 051 20105	1M 5% 0,1W
3111	▲	4822 052 10229	22Ω 5% 0,33W
3112		4822 051 20225	2M2 5% 0,1W
3117		4822 051 20182	1k8 5% 0,1W
3118		4822 051 20182	1k8 5% 0,1W
3140		4822 116 52234	100k 5% 0,5W
3141		4822 116 52234	100k 5% 0,5W
3142		4822 116 52284	47k 5% 0,5W
3143	▲	4822 052 10229	22Ω 5% 0,33W
3144		4822 116 52257	22k 5% 0,5W
3145		4822 116 52269	3k3 5% 0,5W
3146		4822 116 52233	10k 5% 0,5W
3147		4822 116 52276	3k9 5% 0,5W
3148		4822 116 52284	47k 5% 0,5W
3251		4822 116 52284	47k 5% 0,5W
3255		4822 116 52226	560Ω 5% 0,5W
3256		4822 116 52288	510Ω 5% 0,5W
3258		4822 116 52175	100Ω 5% 0,5W
3300		4822 116 52257	22k 5% 0,5W
3301		4822 116 52244	15k 5% 0,5W
3302		4822 116 52251	18k 5% 0,5W
3304		4822 116 52238	12k 5% 0,5W
3305	▲	4822 052 10478	4Ω7 5% 0,33W
3306	▲	4822 052 10478	4Ω7 5% 0,33W
3307		4822 116 52251	18k 5% 0,5W
3308		4822 116 52238	12k 5% 0,5W
3309		4822 116 52257	22k 5% 0,5W
3310		4822 116 52244	15k 5% 0,5W
3312		4822 116 52257	22k 5% 0,5W
3313		4822 116 52257	22k 5% 0,5W
3316		4822 050 11002	1k 1% 0,4W
3317		4822 050 11002	1k 1% 0,4W
3318		4822 116 52269	3k3 5% 0,5W
3319		4822 116 52269	3k3 5% 0,5W
3362		4822 116 52283	4k7 5% 0,5W
3363		4822 116 52256	2k2 5% 0,5W
3364		4822 116 52256	2k2 5% 0,5W
3376		4822 116 52224	470Ω 5% 0,5W
3377		4822 116 52224	470Ω 5% 0,5W
3378		4822 116 52256	2k2 5% 0,5W
3379		4822 116 52256	2k2 5% 0,5W
3501		4822 116 52228	680Ω 5% 0,5W
3550		4822 116 52226	560Ω 5% 0,5W
3551		4822 050 11002	1k 1% 0,4W
3552		4822 116 52257	22k 5% 0,5W
3565		4822 051 20224	220k 5% 0,1W
3566		4822 051 10102	1k 2% 0,25W
3567		4822 116 52257	22k 5% 0,5W
3568		4822 116 52283	4k7 5% 0,5W
3610		4822 116 52238	12k 5% 0,5W
3611		4822 116 52303	8k2 5% 0,5W
3612		4822 116 52238	12k 5% 0,5W
3613		4822 116 52238	12k 5% 0,5W
3614		4822 116 52238	12k 5% 0,5W
3615	▲	4822 052 10108	1Ω 5% 0,33W
3616	▲	4822 052 10108	1Ω 5% 0,33W

3617 ⚠	4822 052 10229	22Ω	5% 0,33W
3700	4822 051 20224	220k	5% 0,1W
3701 ⚠	4822 052 10478	4Ω7	5% 0,33W
3705	4822 051 20103	10k	5% 0,1W
3706	4822 051 20103	10k	5% 0,1W
3708	4822 116 52233	10k	5% 0,5W
3709	4822 051 20103	10k	5% 0,1W
3710	4822 051 20103	10k	5% 0,1W
3711	4822 116 52233	10k	5% 0,5W
3712	4822 116 52233	10k	5% 0,5W
3713	4822 116 52233	10k	5% 0,5W
3714	4822 116 52233	10k	5% 0,5W
3715	4822 116 52233	10k	5% 0,5W
3716	4822 116 52233	10k	5% 0,5W
3717	4822 116 52233	10k	5% 0,5W
3723	4822 051 20223	22k	5% 0,1W
3741	4822 051 20473	47k	5% 0,1W
3742	4822 116 52284	47k	5% 0,5W
3743	4822 116 52284	47k	5% 0,5W
3744	4822 051 20101	100Ω	5% 0,1W
3745	4822 051 20183	18k	5% 0,1W
3746 ⚠	4822 052 10109	10Ω	5% 0,33W
3747	4822 116 52284	47k	5% 0,5W
3748	4822 116 52283	4k7	5% 0,5W
3750	4822 050 11002	1k	1% 0,4W
3752	4822 116 52257	22k	5% 0,5W
4001	4822 051 10008	0Ω	5% 0,25W
4002	4822 051 10008	0Ω	5% 0,25W
4003	4822 051 10008	0Ω	5% 0,25W
4004	4822 051 10008	0Ω	5% 0,25W
4005	4822 051 10008	0Ω	5% 0,25W
4006	4822 051 10008	0Ω	5% 0,25W
4008	4822 051 10008	0Ω	5% 0,25W
4009	4822 051 10008	0Ω	5% 0,25W
4200	4822 051 10008	0Ω	5% 0,25W

COILS

5250	4822 148 80281	DIG.OUT TRANSF.

DIODES

6103	4822 130 30621	1N4148
6500	5322 130 30684	1N4002
6501	5322 130 30684	1N4002
6502	5322 130 30684	1N4002
6503	5322 130 30684	1N4002
6504	5322 130 30684	1N4002
6505	4822 130 34488	BZX79-C11
6506	4822 130 30861	BZX79-C7V5
6507	4822 130 34233	BZX79-C5V1
6550	4822 130 31981	BZX79-C3V9
6562	5322 130 30684	1N4002
6563	5322 130 30684	1N4002
6566	4822 130 31981	BZX79-C3V9

TRANSISTORS & IC's

7000	4822 209 31064	TDA1301T/N1
7042 ⚠	5322 130 41982	BC848B
7043 ⚠	5322 130 41982	BC848B
7060	4822 209 72587	TCA0372
7080	4822 209 72587	TCA0372
7101	4822 209 32036	UM6264BM-10L
7102	4822 209 30388	SAA7341GP
7140	5322 130 42012	BC858
7141	4822 130 61207	BC848
7300	4822 209 83163	LM833N
7362	4822 130 61207	BC848
7363	4822 130 42696	BC818-25
7364	4822 130 42696	BC818-25
7371	4822 130 42696	BC818-25
7372	4822 130 42696	BC818-25
7500	5322 209 62115	MC79L15AC
7501 ⚠	4822 209 71579	MC 7805.2
7550	5322 130 42012	BC858
7562	5322 130 42012	BC858
7660	4822 209 72587	TCA0372
7700	4822 900 10353	MC 68HC05D9/P146
7740	5322 130 42012	BC858
7741	4822 130 61207	BC848

CONTROL & DISPLAY PANEL

MISCELLANEOUS

	4822 256 91876	FTD HOLDER
1402	4822 242 72527	RESONATOR 4 MHz
1420	4822 276 13114	TACT SWITCH
1421	4822 276 13114	TACT SWITCH
1422	4822 276 13114	TACT SWITCH
1423	4822 276 13114	TACT SWITCH
1425	4822 276 13114	TACT SWITCH
1426	4822 276 13114	TACT SWITCH
1427	4822 276 13114	TACT SWITCH
1428	4822 276 13114	TACT SWITCH
1429	4822 276 13114	TACT SWITCH
1430	4822 276 13114	TACT SWITCH
1431	4822 276 13114	TACT SWITCH
1432	4822 276 13114	TACT SWITCH
1433	4822 276 13114	TACT SWITCH
1434	4822 276 13114	TACT SWITCH
1435	4822 276 13114	TACT SWITCH
1436	4822 276 13114	TACT SWITCH
1437	4822 276 13114	TACT SWITCH
1438	4822 276 13114	TACT SWITCH
1439	4822 276 13114	TACT SWITCH
1440	4822 276 13114	TACT SWITCH
1441	4822 276 13114	TACT SWITCH
1442	4822 276 13114	TACT SWITCH
1443	4822 276 13114	TACT SWITCH
1444	4822 276 13114	TACT SWITCH
1445	4822 276 13114	TACT SWITCH
1446	4822 276 13114	TACT SWITCH
1447	4822 276 13114	TACT SWITCH
1450	4822 130 91085	DISPLAY 8-BT-120GK

CAPACITORS

2402	5322 124 21643	22µF 20% 40V
2404	5322 124 21643	22µF 20% 40V

RESISTORS

3400	4822 116 52258	220k 5% 0,5W
3401	4822 116 52257	22k 5% 0,5W
3402	4822 116 52257	22k 5% 0,5W
3403	4822 116 52257	22k 5% 0,5W
3404	4822 116 52257	22k 5% 0,5W
3405 ⚠	4822 052 10478	4Ω7 5% 0,33W
3406	4822 116 52257	22k 5% 0,5W
3407 ⚠	4822 052 10108	1Ω 5% 0,33W
3408	4822 116 52269	3k3 5% 0,5W
3409	4822 116 52257	22k 5% 0,5W
3410 ⚠	4822 052 10688	6Ω8 5% 0,33W
4401	4822 051 10008	0Ω 5% 0,25W

DIODES

6400	4822 130 30613	BAW62
6401	4822 130 30613	BAW62
6402	4822 130 30613	BAW62
6403	4822 130 30613	BAW62
6404	4822 130 30613	BAW62
6405	4822 130 30613	BAW62
6406	4822 130 30613	BAW62

IC

7400	4822 209 30249	TMP47C212AN

HEADPHONE PANEL

BU-5	4822 267 31453	HEADPHONE SOCKET
2370	5322 122 32654	22nF 10% 63V
3370	4822 101 21199	10kX2 20% 0,025W
3371	4822 116 52233	10k 5% 0,5W
3372	4822 116 52233	10k 5% 0,5W
3373	4822 116 52244	15k 5% 0,5W
3374	4822 116 52244	15k 5% 0,5W
3375	4822 116 52206	120Ω 5% 0,5W
3386	4822 116 52206	120Ω 5% 0,5W
7370	4822 209 82274	NJM4560D

IR PANEL

1461	4822 214 51772	IR RECEIVER
3460 ⚠	4822 052 10478	4Ω7 5% 0,33W
3461	4822 116 52284	47k 5% 0,5W

MISCELLANEOUS

1501 ⚠	4822 070 31001	FUSE 100MA
5500 ⚠	4822 146 31045	MAINS TRAFO